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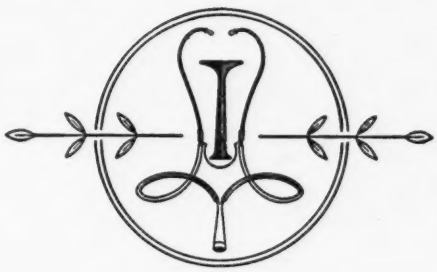

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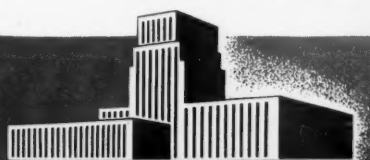

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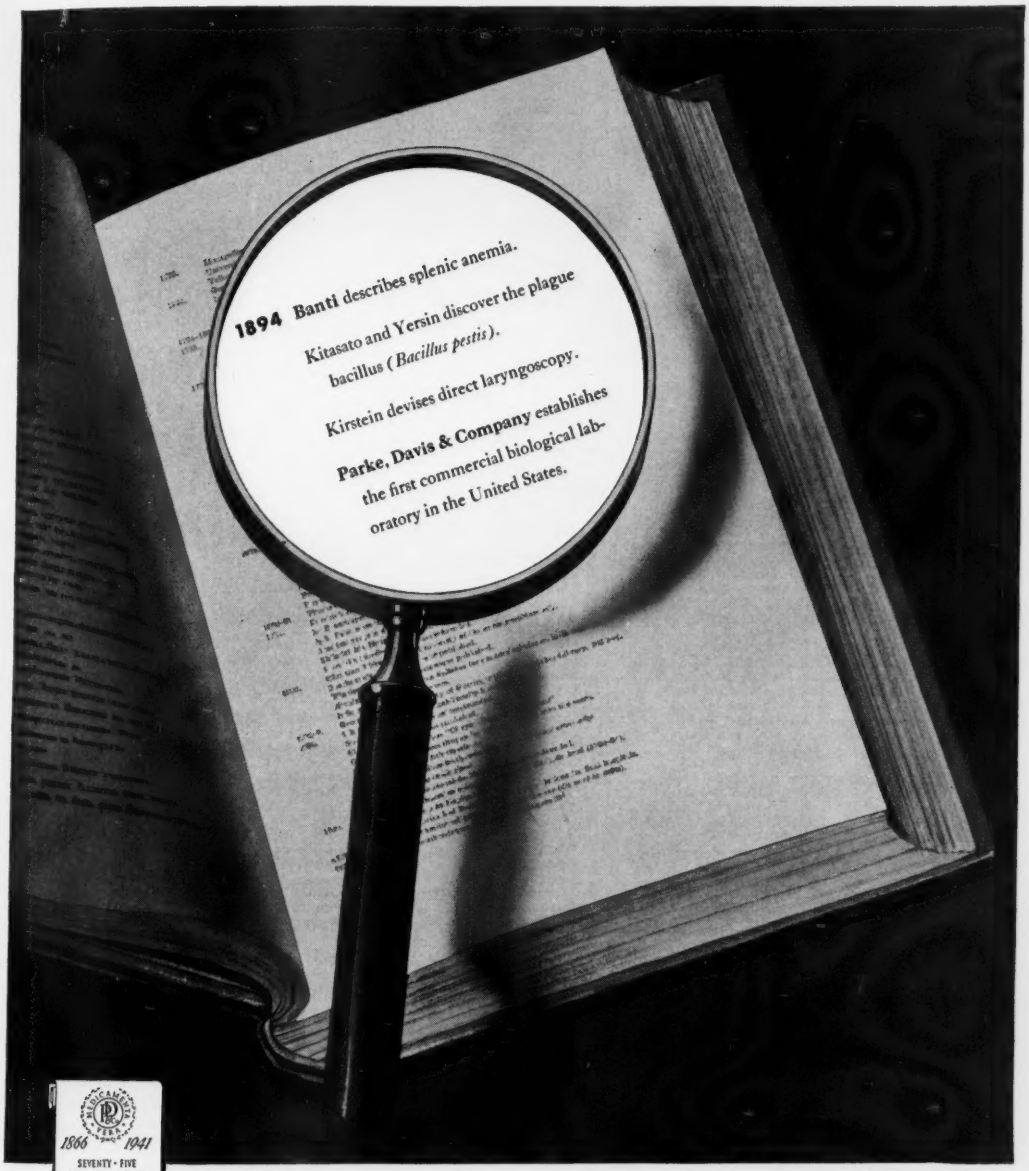
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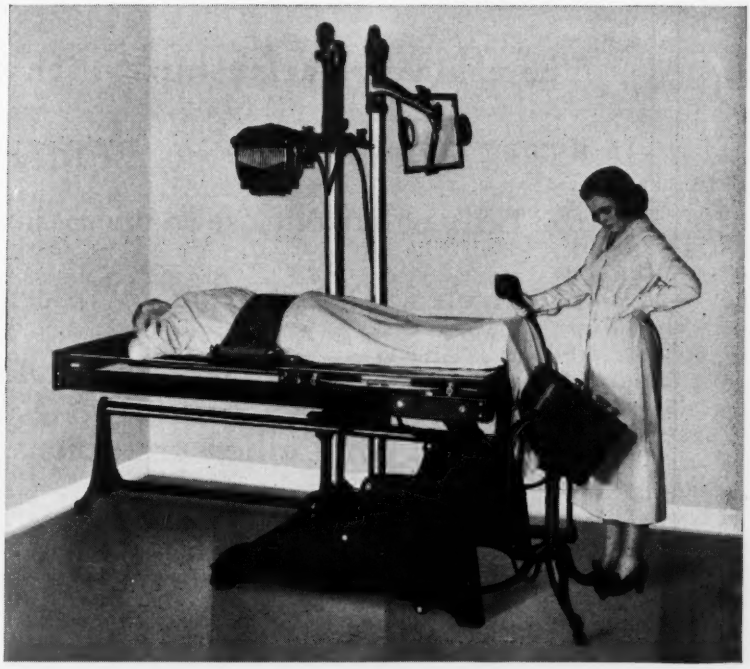

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PRESIDENT'S ADDRESS*

Forrest L. Loveland, M.D.

Topeka, Kansas

The Kansas Medical Society was chartered February 10, 1859 by the Territorial Legislature then in session at Lawrence, and with the exception of two years during the Civil War has met annually for the purpose of considering all matters pertinent to the welfare of the organization. On this the 82nd Anniversary of our Society we meet again to consider scientific, economic and social problems of vital concern to us all.

More-so than at any other time in our history we are confronted with serious problems. In a spirit of fairness we cannot blame inexcusable wars for all our political and economic ills for after all it is the people that produce them. Nevertheless, war comes to us as it comes to all people and in victory or defeat troublesome problems invariably show their fangs. Unemployment and poverty assume gigantic proportions and whenever these grave offenders stalk the land medical problems spring up over night like mushrooms.

In as-much as the practice of medicine has to do with the vicissitudes of human life it is usually the first target shot at, by those interested in finding fault with established customs. Periods of stress are chosen as being a most propitious time to cry their wares. Undue advantage is taken of our apprehensiveness. Studied efforts humanely and attractively designed to protect all our people, at all times, from the woes and the infirmities of life have been put forth to discredit our present system of medical practice. To date such efforts have met with rigid opposition both within and without legislative halls. No doubt some of the criticisms directed against us are well taken. Our medical horizons must be broadened to meet rapidly changing conditions. The men of medicine are keenly sensitive to the situation and are meeting it with equanimity. Since the beginning of time politically controlled medicine has failed to solve emergency medical problems. The ethical and scientific practice of medicine, without the intervention of many bureaus or political third parties standing between the patient and his or her physician, can and will solve our problems in due time.

War clouds are again blackening the sky and as a people we are finding ourselves engulfed in the midst of a gigantic military prepardedness effort. Unanimity of opinion relative to the merits or demerits of such action is lacking. Too many people believe that the world in general and our own country in particular has gone topsy-turvy and that there is nothing to be done about it. Young and old alike, especially those who have subscribed to a fatalistic point of view, move about as though they were living in a dream-land assuming no responsibility for anything or anybody. Unfortunately, war has no monopoly upon such a point of view. Too frequently it is directed into every channel of human endeavor, slowing progress almost to a stand-still. Even worse, it unfavorably influences the moral values of life without which we are poor indeed. Despite such lethargic manifestations on the part of those who fail to do their own thinking, the great majority of our people are aware of impending danger. They realize that there is an American way of life and they want to preserve it. They realize also the necessity of defending our American institutions against aggression from without or from within our borders. If war must come in order that civilization may endure we should waste no time in our preparation to unleash the dogs of war.

In Kansas, as elsewhere in our country, the men of medicine are answering the call to arms. Both military and civilian needs must be adequately cared for. Insofar as it is possible, our men of military age will serve with the armed forces, while our men above the military age limit will serve the civilian population and essential industries. It has been estimated that approximately 10,000 medical doctors, in addition to present staff organizations, will be required to meet military needs. The rapid growth of communities due to the establishment of defense industries will present health problems for those physicians doing civilian duty. The work of our examining physicians assigned to local draft boards

*Presented at the 82nd Annual Session of The Kansas Medical Society, Topeka, May 13, 1941.

has been outstanding. It is of interest to note that the percentage of rejections due to physical unfitness of Kansas draftees is exceptionally low.

We are barely on the thresh-hold of our preparedness activities. Our efforts must be immediately directed to supplying adequate medical attention to those communities within our State whose physicians have entered the service. County medical societies adjoining such communities must assume for the time being this obligation. Temporary quarters can be established for the period of the emergency and service supplied on a rotating basis or otherwise. Regardless of what we may personally think of war, medical traditions must prevail. This is our job so let us handle it without a whimper.

The relief problem while not as acute as it has been in the past still remains a source of worry. Employment afforded by preparedness activities should lessen the incidence of indigent sickness. As a Society we are deeply endebted to the Kansas State Board of Social Welfare for their interest and cooperation in indigent sick problems. The ability of this Board to correctly appraise the medical phase of the problem has resulted in the establishment of effective indigent medical care programs in about seventy of our counties. The salvation of many of our counties depends upon their ability to rehabilitate those upon relief and indigent sick rolls. Members of county medical societies are proving to be the strong right arms of this endeavor.

Society activities are rapidly expanding. Committee work is excellent. At least three of our committees are sponsoring post-graduate courses second to none in the country. You are familiar with the work of our legislative committee. The medical profession of Kansas greatly appreciated the willingness of the Legislature to uphold and continue the present high standards of medical practice in the State. This matter is of great importance to the public health and welfare of Kansas. For many years no doctor of medicine has been licensed in this State who has not received the excellent benefits of modern medical education. This is an enviable record which must be maintained. Oft times, our activities lead us far afield. It is well that this happens occasionally to every professional man. Rubbing elbows with law-makers, lawyers, farmers, business men, industrialists, teachers, and preachers gives us an appreciation of the other fellows problem. It stimulates a spirit of tolerance so necessary to achievement. It has been said that the saving of lives is not enough. The perfecting of lives should be our aim. Medicine must be concerned with cultural values, the passion for wisdom, beauty and justice. These are the real expressions of health and the source of much happiness and success. I repeat, our medical horizons must be broadened to meet rapidly changing conditions.

Let it be remembered that the importance of lay education cannot be over-emphasized. Our past indifference to this lucrative field of medical opportunity is inexcusable. Our patients know to little of life, how to live it or how to conserve it. Most of our people are unfamiliar with the potential resources for health. The relevant facts of life are still a deep mystery to the average man and woman. Think of what an informed public opinion would mean to the life of every community. Ignorance is quite as inexcusable as war. Like soap and water a smattering of knowledge is always obtainable if there is a will to find it. For the good of all concerned our profession must assume its share of this educational obligation.

Despite perpetual conflict the world over, there is room for reconciliation and progress. This is particularly true in our own country and especially so in Kansas. Harmony and achievement are well known to Kansas people. They are not strangers to the men of Kansas medicine. Tomorrow will be another day and may our hope be transmuted into realization. As individuals let us put ourselves together and the world will come out all right. As men of Kansas medicine let us recall Oslers "Master word in medicine. 'Work'." It is the touchstone of progress, the measure of success in every day life. Let us write it upon the tablets of our hearts and bind it upon our foreheads.

Once again, I thank you for your kindly consideration of me. I shall never forget the experiences of the past year. I shall never cease to be thankful for them. It is my sincere hope that as a Society and as individual members thereof we have been enabled to move a little farther along the road that leads to achievement and progress in our professional capacities.

May the coming new year be the best of all.

One of the strangest twists of the war is that London's psychiatrists are sitting in their offices with nothing to do. London's neurotics, estimated at seven per cent of the population, have something else to think about now.—Survey Graphic.

Although there is no dependable routine x-ray method for determining the sex of the unborn child, under certain peculiar circumstances it is sometimes possible after about the seventh month of pregnancy, Hygeia, The Health Magazine states in answer to an inquiry.

SPINAL ANESTHESIA IN GENERAL SURGERY*

AN ANALYSIS OF 400 CASES

Orville R. Clark, M.D.

Topeka, Kansas

The principle part of this paper is an analysis of 400 consecutive cases of attempted spinal anesthesia —my experience with spinal anesthesia in the last seven years in my association with Dr. W. M. Mills. I use the expression "attempted spinal anesthesia" as there were five cases in which the anesthesia induced was not sufficient to even start the operation, in addition to one in which I experienced the embarrassment of breaking a needle while endeavoring to make the puncture. The causes of these failures will be considered later.

The cases comprise a selected portion of a general surgical practice, and make up approximately one-sixth (16.88 per cent) of the cases operated during this period. From this it is evident that enthusiasm for this one type of anesthesia has not been pushed to the exclusion of all other types.

The types of operations performed under spinal anesthesia during this period are listed in Figure 1. It will be noted that there is a fairly wide distribution, and that the anesthesia has not been used for a limited type of operations.

Some of the cases are the "poor risk" type, for whom it was considered spinal anesthesia entailed perhaps less danger than some type of general anesthesia, although they were far from satisfactory risks for any anesthetic. Though it is not a fair test of spinal anesthesia (or for any other type) to give it only for those cases which are in too poor condition for other types of anesthesia, it is true nevertheless that there are a number of patients who do not seem able to withstand the depression of an anesthetic in addition to the operative procedure contemplated, who will go through it under a spinal in fairly good condition. In my group there were fifty-three anesthetics which were given to individuals becaues it was felt they would not be able to undergo the operation under other types of anesthesia, and the procedure contemplated was too extensive to be done under local infiltration. As nearly half of the mortalities are in this group of a little over one-eighth of the patients, it is quite evident how serious a situation we have in this group.

There are thirty-four individuals in the series who had two spinal anesthetics. Of these seventeen were "two stage" procedures for prostatic enlargement or bladder diverticulum. We have come to the conclusion that a relatively low spinal anesthesia is better for doing the suprapubic cystostomy than local infiltration for several reasons: It makes the patient more comfortable; it makes it possible to conduct a thorough digital or even visual exploration of the bladder which may be of considerable value to determine the presence of stone or diverticulum, and occasionally in detecting an unsuspected prostatic carcinoma; and we feel that it adds very little to the danger of the procedure when a small dose is used.

Of the 400 cases, 284 were given procaine, novocaine, or neocaine, and are hereafter grouped together as "procaine" since the chemical make-up of the drugs is the same; seventy-three were given pontocaine; thirty-seven metycaine; three spinocaine; and two nupercaine. My use of the last two agents has been only in recent months, and, with rather limited indications the cases are few in number—too few to be of any stastical significance.

The technique used at present is briefly described below. The technique varies depending on the type

FIGURE 1

OPERATIONS PERFORMED UNDER SPINAL ANESTHESIA

Urological		102
	Prostatectomy	38
	Prostatic Resection	14
	Cystostomy	26
	Bladder Resection	4
	Cystoscopy	7
	Radical Operation for Ca Penis	1
	Kidney and Ureter	12
Obstetrical and Gynecological		58
	Laparotomy	41
	Perineal Plastic	15
	Cesarean Section	2
Rectal		47
	Hemorrhoidectomy, etc.	44
	Radical Resections	3
Appendectomies		44
	Simple Appendectomies	25
	Appendectomy—Drainage	19
Colon		26
	Resections	8
	Colostomy or Ileo-colostomy	16
	Diverticulitis	1
	Colofixation	1
Hernia		51
	Inguinal and Femoral	41
	Ventral	10
Lower Extremities		23
	Amputations	11
	Fractures, Cartilage Operation, etc.	12
Inguinal Dissection		1
Stomach		13
Biliary Tract		17
Intestinal Obstruction		6
Suture of Ruptured Wound		3
Exploratory Laparotomy		9
Total		400

*Presented at the 81st Annual Session of The Kansas Medical Society, Wichita, May 16, 1940.

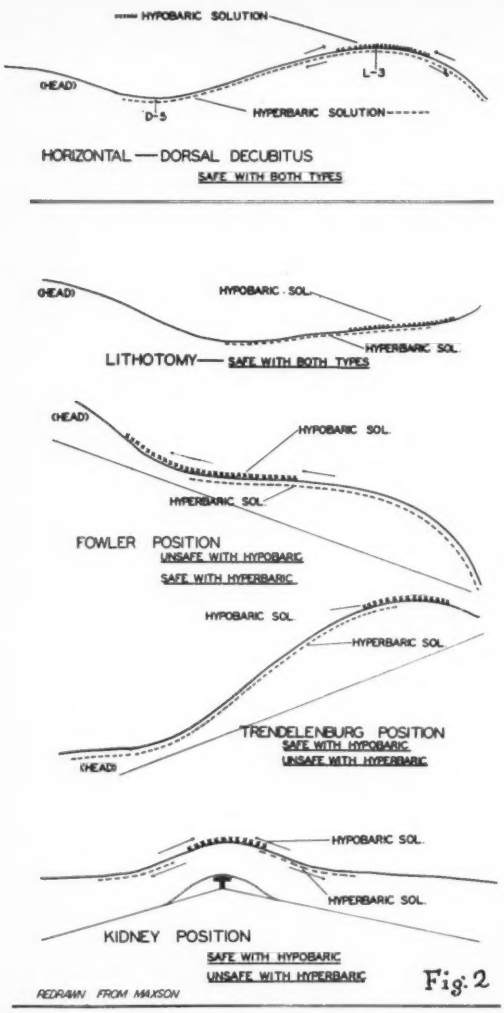

Figure 2. Diagrams illustrating the effect of various positions on the movement of hypobaric and hyperbaric solutions.

of anesthetic solution used. There are three types, distinct in whether their specific gravity is greater, or less than that of the spinal fluid. The hyperbaric solutions, or those heavier than the spinal fluid, include procaine or metycaine which is dissolved in the spinal fluid or is administered as a prepared concentrated solution. Being heavier than the spinal fluid, these tend to flow downward, and hence in Trendelenburg position flow toward the head, while in Fowler's position, or while sitting, they tend to flow away from the head. The hypobaric solutions are lighter than the spinal fluid, and hence flow toward the head in the sitting or Fowler's positions, and away from the head in the Trendelenburg position. Among the hypobaric solutions are spinocaine and the Jones preparation of nupercaine (1:1500). The isobaric solutions are practically the same weight as the spinal fluid and so are unaffected by gravity—at least for practical purposes. Pontocaine is an example of this type. The effect of various positions commonly employed on the operating table upon the hypobaric and hyperbaric solutions is shown in Figure 2.

For low (sacral) anesthesias, using procaine or other hyperbaric solution I have used the "Sitting Bull' technique of Maxson in which sixty to one hundred mg. of the procaine is dissolved in 1.5-2.0 cc. of the spinal fluid, and injected very slowly into the fourth lumbar interspace with the patient in the sitting position during and for five minutes following the injection. This tends to limit the action of the anesthetic solution to the lowermost segments of the cord, and limits the anesthesia to the "saddle" type in the majority of cases, while occasionally the legs will be anesthetized, or rarely paralyzed. After five minutes the patient is put in the position desired for the operative procedure. The same effect can be produced by using spinocaine (or other hypobaric solution) injected in the lateral position instead of sitting, and followed by immediate Trendelenburg position to confine it to the sacral portion of the cord.

For lower abdominal work I use procaine in a dosage of 120-150 mg. dissolved in 2.0-3.0 cc. of spinal fluid and injected in the third lumbar interspace with the patient in the lateral position. The table is kept flat for ten minutes unless it is noted that the level of anesthesia is no extending high enough, when Trendelenburg position may produce convection upward to the desired level by gravity. When the anesthesia has reached the desired level the table is again leveled for the remainder of ten minutes, to prevent unnecessary upward extension. After a period of ten minutes the anesthetic should be fixed in the tissues and the patient may be put in any position desired for the operation. For operations which are expected to last longer than the duration of procaine anesthesia pontocaine is used by a similar technique, but is injected in the second lumbar interspace in a dose of from twelve to fifteen mg., in 2.0-3.0 cc. of solution. Because it is practically isobaric the postion should have relatively litle effect on the level of anesthesia, but I have usually preferred to keep the table level for an initial period. For nupercaine or spinocaine, the lateral position should be used for injection, and a slight Trendelenburg position maintained to prevent undesirable upward extension of the anesthetic solution.

For upper abdominal work I use pontocaine almost entirely now, because of its longer period of

anesthesia, which is frequently of value in this type of operation. From fifteen to twenty mg., in 3.0-4.0 cc. of solution is injected in the first lumbar interspace, or the space between the twelfth dorsal and first lumbar vertebrae, and the table kept flat. If procaine is used for this work it is given the same as for the lower abdominal work, but in doses of 150-200 mg., and the table tilted in mild Trendelenburg position until the anesthesia has reached nearly to the desired level, when it is again leveled for a ten minute period of fixation.

For kidney surgery the hypobaric solutions are particularly suited as they may be given with the patient in the position ready for operation, then the kidney rest raised, which will give the greatest concentration of the anesthetic at the top of the curve. Spinocaine in doses of 1.5-2.0 cc. (150-200 mg. of procaine) diluated with a volume of spinal fluid nearly the same, works nicely. It is not necessary to turn the patient from one side to the other in using hypobaric solutions for this type of operation as the lateral position tends to give the greatest anesthesia on the upper side.

The percentage of satisfactory anesthesias is shown in Figure 3. In addition to those which were "entirely satisfactory to both surgeon and patient" ("A"), there is included a second group in which the anesthesia was satisfactory for as long a period as could be reasonably expected, but in which the operation for some reason was prolonged beyond the anticipated time ("B"). A good percentage of these received supplementary anesthesia for closure of the wound. This group could be considered a result of faulty estimation of the duration of the operation, or perhaps to choice of the wrong anesthetic agent by the anesthetist, but in fairness can hardly be called anesthetic failures.

FIGURE 3
QUALITY OF ANESTHESIA

	Group "A"	Group "B"	Inadequate
Procaine	92.8%	5.3%	1.9%
Metycaine	97.3	2.7	0.0
Pontocaine	74.0	6.8	19.2
Spinocaine	100.0	0.0	0.0
Nupercaine	50.0	0.0	50.0
All Types	89.5	5.2	5.3
High Anesthesia (60)	66.7	11.7	21.6
Medium " (240)	91.7	3.7	4.6
Low " (100)	99.0	0.0	1.0

It will be noted that 89.5 per cent of all the cases were entirely satisfactory, with another 5.2 per cent falling in the group just described. These total 94.7 per cent. In the remainder the spinal was a failure or so poor that supplementary anesthesia was required for the major portion of the operation. The percentage of satisfactory anesthesias with pontocaine will be noted to be lower than with the other agents. Part of the reasons for this will be brought out later.

Another means of approach to the study of satisfactory anesthesia is by dividing the entire group into three sub-groups, called "high," "medium," and "low" anesthesias. The high group comprises upper abdominal surgery (gall bladder, stomach, high ventral hernias, high colonic resections, etc.) and kidney operations (sixty cases in this series). The medium group includes the majority of abdominal operations (appendectomies, hysteroctomies, etc.) inguinal herniae, and operations on the bladder which are

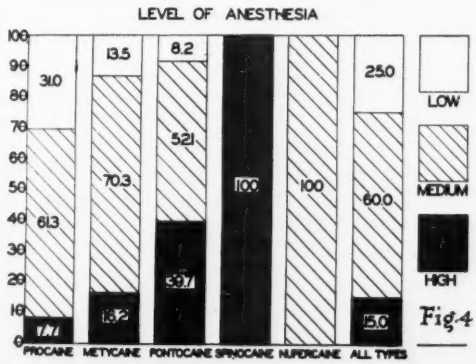

Fig. 4

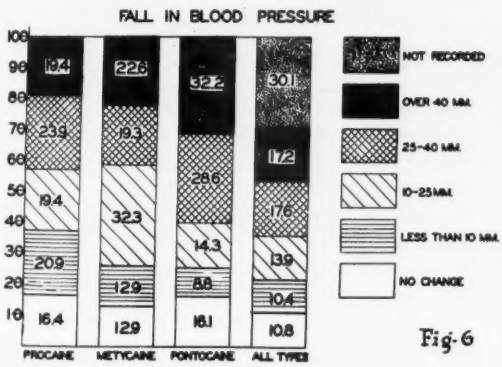

Fig. 6

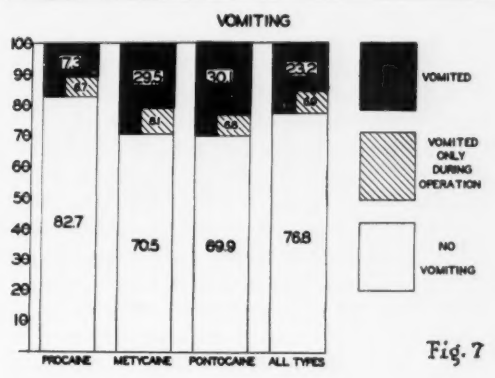

Fig. 7

done through a suprapubic incision (240 cases in this series). The low anesthetics are those for perineal work, cystoscopic procedures including transurethral prostatic resections, hemorrhoidectomies, and operations on the lower extremities (100 cases in this series).

We note from the table that the higher the anethesia is require the greater the percentage of failures. This has a bearing on some of the facts to be brought out later.

Figure 4 shows the percentages of the high, medium, and low anesthetic levels require of the various anesthetic drugs. The most significant finding here is the large percentage of high anesthesias for which pontocaine was used in comparison with procaine and metycaine. This factor is partly responsible for the greater number of unsatisfactory anesthesias with pontocaine shown previously in Figure 3. Spinocaine has 100 per cent high anesthesias—all for kidney operations and all satisfactory—but this number is too small for any real comparisons.

The duration of the operations performed under various types of spinal anesthesia is shown in Figure 5. It is noteworthy that procaine and metycaine were used predominantly for operations of less than one hour (87.6 per cent and 59.5 per cent) while pontocaine was used predominantly for long cases, 81.4 per cent being over one hour and 4.3 per cent over two hours. This is another factor in the increase in the percentage of failures with pontocaine, for of course there is a greater chance of inadequate anesthesia in those cases of long operations than with those of short duration.

FIGURE 5
DURATION OF OPERATIONS

	Less Than 1 Hour	1-2 Hours	Over 2 Hours
Procaine	87.6%	12.4%	0.0%
Metycaine	59.5	40.5	0.0
Pontocaine	18.6	77.1	4.3
Spinocaine	33.3	33.3	33.3
Nupercaine	0.0	50.0	50.0
All Types	58.8	38.9	2.3

Thus, while pontocaine did have a higher percentage of failures than procaine or metycaine, it should be noted that it was also used predominantly in the most difficult cases—the upper abdominal operations and those of long duration.

Although the nupercaine group is too small to draw any conclusions from it, it does demonstrate to some extent the value of this drug in the exceptionally long cases—one of these being two and a quarter hours. One of the nephrectomies under spinocaine lasted for two and one-half hours, the longest duration of satisfactory anesthesia of the entire series. I do not know from experience, nor have I found any specific reference as to whether the expected duration of spinocaine anesthesia is any greater than with other forms of procaine.

Figure 6 shows the amount of decrease in blood pressure with the various anesthetic agents. There is no significant difference in the reactions of the various drugs used for anesthesia in this respect. Pontocaine is generally supposed to produce less fall in blood pressure than the other drugs, but in this group it will be noted that it produced a greater decrease than procaine or metycaine. It must be remembered again that this drug has been most commonly used for those cases requiring larger doses, and in upper abdominal operations. These are the cases which must necessarily show the greatest amount of change in blood pressure since it is necessary to get the anesthesia up in the middle or upper thoracic levels where the sympathetic nerves originate, and they will also be affected.

It is significant and worthy of mention that there were none of the patients in the entire group in whom the condition during the operation became alarming, or where resuscitation was required. Most of them received twenty-five or fifty mg. of ephedrine sulfate about five minutes before the injection of the anesthetic solution. Exceptions were those patients who had a hypertension, or those in whom the anesthesia was being limited to the sacral segments, when there is no change in the blood pressure as none of the sympathetics are involved. I have continued to use ephedrine because the results have been satisfactory. Many do not use it and it is possible that my cases would do as well without it. When ephedrine is being used it is probably more effective when given intramuscularly, and when given about five minutes before the injection of the anesthetic. This point has been emphasized by Holmgren and Jackson at the Jackson Clinic in Madison, Wisconsin.

The vomiting of the patients during and after operation is depicted in Figure 7. Of all cases 76.8 per cent did not vomit at all, and an additional 6.9 vomited only during the operation, so that 83.7 per cent were free of all post operative vomiting. There is a lower incidence of vomiting in the procaine group, probably again proportional to the greater number of the lower anesthesias.

In Figure 8 the percentage of cases requiring post operative catheterizations are shown. Here again procaine has the lowest percentage with pontocaine next and metycaine is quite definitely above the others. Included in this group (metycaine) are two cases which I wish to mention in more detail as there was a more serious element than mere urinary retention.

One was a case for prostatic resection. He was given 1.0 cc. (100 mg.) of the metycaine solution

FIGURE 8
POST OPERATIVE CATHETERIZATIONS

	Procaine	Metycaine	Pontocaine	All Types
None	50.0%	51.4%	58.9%	52.9%
Total Catheterizations	17.9	40.5	25.4	25.4
Once only	8.5	8.1	6.9	7.7
Less than 7 days	9.4	21.6	17.8	14.9
7-30 days	0.0	5.4	4.1	2.3
Over 30 days	0.0	5.4	0.0	0.5
Group "B" (retention catheter, etc.)	32.1	8.1	12.3	21.7
	100.0	100.0	100.0	100.0

diluted to 2.5 cc. with spinal fluid, and injected slowly in the fourth lumbar interspace while in the sitting position. He was kept in the sitting posture for five minutes after the injection. Anesthesia was prompt, was adequate, and the operative procedure was carried out without difficulty. He had a satisfactory course immediately after the operation, but when the catheter was removed about five days later he was unable to void, although a large catheter could be introduced without encountering any resistance. It was a period of about six weeks before he was again able to void at all, and two weeks more before he could discontinue catheterization entirely. He had a small area of persistent anesthesia over the distribution of the lower sacral segments between the coccyx and anus which persisted for several weeks but disappeared completely. He has since made a complete recovery.

The other case was a man who was operated for a ruptured appendix under metycaine anesthesia induced by 1.6 cc. (160 mg.) diluted to 3.2 cc. with spinal fluid, and injected in the third lumbar interspace with the patient in the lateral position. Anesthesia was adequate for the operation, which was conducted without difficulty. It was necessary to catheterize him post operatively, but not much concern was felt until he was unable to void even after getting up. He also had a persistant anesthesia over the sacral nerve distribution, and an obstinate constipation. He required some catheterization for six months. He gets along well without catherization at the present time, but still has a marked constipation.

These two cases have caused me considerable concern, and it is chiefly because of them that I have discontinued the use of metycaine in my own work. It may have been purely coincidence that both of these were following the use of metycaine, but on the other hand nothing similar has happened with any of the other drugs which I have used for anesthesia. The nearest approach to it was one individual who required catheterization for sixteen days after an pontocaine anesthesia—the only case which required catheterization for a period longer than twelve days outside the metycaine group, in which (out of thirty-seven patients) there were three who required prolonged catheterization—the two mentioned above, and a perforated ulcer who had retention for twenty-two days.

The mechanism of this condition is rather obscure, but it seems to me that it was an abnormal prolongation of the pharmacological action of the drug which was apparent only in the particular nerves which supply the bladder and perineum. It could hardly have been traumatic in origin as both punctures were low in the cauda equina. The factor of concentration probably played a part, and individual idiosyncrasy may have had a part. These cases are to be fully reported at a later date, when a more detailed case history and discussion will be presented.

It will be noted that approximately one-fourth of all the patients who were given spinal anesthesia required catheterization at least once, and that if the group of operations on the bladder, prostate and urethra is eliminated (those where there was a retention catheter or a suprapubic tube left in place and the patient had no opportunity or necessity to void—listed in the table as Group "B") about one-third of the patients who had an opportunity to void were unable to do so the first attempt. Though I do not have any comparable figures for the other anesthetics, I think that this may be somewhat above the catheterization requirements of other types of anesthesia.

Mortalities and Complications: The mortality rate is rather high (thirty-four deaths or 8.5 per cent) but when we study the actual causes of death we find that the larger percentage of them were due to causes which were beyond the control or influence of the anesthetic or in many cases of the operation. Fifteen, or nearly half, were in the group of "poor risk" cases which would almost certainly have died under any type of anesthesia; some even without operation.

The cases of death were: Pneumonia four; pulmonary embolus four; peritonitis eight (present at the time of operation in five); tetanus (following compound fracture) one; "general debility" six; cardiac failure two; mesenteric thrombosis (present at time of operation) one; ileus and dilatation of the stomach two; and there were six which died of the condition for which they were operated (such as carcinomatosis).

The group listed as "general debility" I realize is included in a very loose term, but in this particular instance it consists of individuals who were in rather poor condition, who never showed any favorable response at any time after operation, but ran a continuous downhill course and died, without any spe-

cific condition which we could find to account for the death. Four of these were cases of prostatic obstruction, one a closure of a disrupted cholecystectomy wound, and one a resection of the right colon for carcinoma complicated by intussusception. Four cases of pulmonary embolism were encountered, and it was ironical that two of them should have occurred on the same day, in patients whose operations were the same day, and both of whom had some colon disease (one carcinoma, and one diverticulitis). The case of mesenteric thrombosis had the condition before operation, which was undertaken only in the hope that it would be something amenable to surgical measures, but he was in no condition for any radical measures.

If any of these cases are directly attributable to the anesthetic I believe they would be the two listed as cardiac failure. One of these was a prostatectomy who did fairly well for twenty-four hours, then rapidly failed and died about thirty-six hours post operatively. The other was an elderly man who had a cholecystectomy and exploration of the common duct, with removal of two stones from the duct. His progress was excellent for thirty-six hours when he developed a pulmonary edema, and after a temporary rally died sixty hours after the operation. Even in these two, the favorable reaction immediately after the operation precludes the possibility of it being a severe depression from the anesthetic and from which the patient never recovered, and makes it somwhat doubtful whether the entire blame should be on the anesthetic.

The complications which are not included in the mortalities total twenty-three in number, and are: Pneumonia two; bronchitis five; pulmonary infarct one; parotitis one; thrombophlebitis four; post-operative hemorrhage one; back pain one; urinary retention (prolonged) two; broken needle one; paresthesia of thigh one; peroneal nerve paralysis one; psychosis one; headache two.

Among these are several which are unquestionably complications of spinal anesthesia and are not attributable to anything else. The one case of persistant back pain has not been severe and has not kept him from working but has persisted for nearly two years. The patient states that it is decreasing slowly. I have wondered if this may be an example of the so-called ligamentous backache, from the puncture of the interspinous ligaments by the needle. The cases of paraplegia of the thigh and the peroneal nerve paralysis occurred before I began the use of small gauge needles exclusively, and probably do have their basis in traumatic injury from the puncture. The two cases of headache are distinctly a complication of spinal anesthesia—or at least of spinal punctures. My incidence of this complication has been far below that generally reported, but I am not aware of the factors which may have brought it about. The case of psychosis was an elderly man who developed a degenerative psychosis following a prostatectomy. It is distinctly questionable how much effect the anesthetic had, and how much of it would have developed anyway.

Breaking of a spinal needle while attempting to make a puncture is one of the things we are all apt to think will never happen to us. It may be due to careless or faulty technique in making the puncture, to equipment which is not in proper condition, or to a sudden and unexpected movement of the patient. I had it happen once, and I am not anxious to have the experience again. In this instance I was asked to give a spinal anesthetic on an occasion when I did not have my own instruments with me, and the needle I was using was not only larger than that to which I am accustomed (it was a No. 20, while I ordinarily use a No. 22) but also had a very dull point—so much so in fact that it was impossible to thrust the needle through the skin of the back. Because of this I used one of the hollow "needle directors" to penetrate the skin and interspinous ligament, then put the needle through the director. After it had reached a point at which I thought it might be in the subarqchnoid space, the stylete was removed. No fluid dripped from the needle, and the needle was rotated to see if it would flow in the new position, which it will frequently do. It did not, and the stylet was being replaced to readjust the needle, when it was found that it would only go half way through. It was obvious that the needle was broken, and the patient was given a cyclopropane-oxygen anesthesia and the needle removed after some search. The end of the fragment was found in the interspinous ligament, against one of the vertebral spines.

It has been my theory that as I turned the needle, it was sheared off by friction against the sharp edge of the needle director, perhaps made easier by some angulation at the point where it was against the spinous process. I have never cared for these directors for my personal use, and since this incident I have been certain that I do not care to use them. This accident has also served as an incentive to make a more thorough check on the condition of needles before doing a puncture, and to use only rustless steel needles in order to eliminate the danger of rusting of the needle outward from the lumen where it is not visible. I have had no experience with the gold needles.

If one is certain that he has broken a needle, if the proximal portion of the needle or the stylet or both are in place, they should be left there, as they serve as a good guide for finding the remaining

portion of the needle, which might otherwise be very difficult to locate. The technique of removal of broken needles has been carefully described by Lahey, and is given in detail in Maxson's book.

There were a number of failures in the series. Some of course were due to the use of too small a dose so that the anesthesia either did not go high enough or the duration was not sufficient. During my early use of pontocaine I am sure that several failures were due to injecting the solution in too low an interspace. Pontocaine being isobaric is influenced very little by gravity and must be injected at a higher level, particularly for upper abdominal surgery. There were a number of poor anesthesias or even outright failures when I was using a long bevel needle, and I believe these may have been caused by leakage of the solution outside the dura. This is much more likely to happen with a long bevel needle, as it is possible to have the point within the dura so that fluid can be aspirated, yet the lumen is also outside the dura, so that when the solution is injected part or all of it escapes outside the dura.

There have been several failures in another group —where the spinal fluid would drip from the needle, but could not be aspirated by a springe. Though these will not all be failures, a large percentage will, and if a good flow is not obtained it is probably wise to make a new puncture at a different interspace.

I believe that there is also a group of individuals, small in number, who may be hyper-resistant to the action of local anesthetics. There was one case in particular, which seems to me to fit in this category. He was to be operated for inguinal hernia, and made the statement before injection of the spinal anesthetic that it took more novocaine for him than for most people. He was given an average dose of spinal anesthetic, by what I thought was a satisfactory puncture, but developed no anesthesia. The operation was done under local novocaine infiltration, and it was true that it did require a greater amount of novocaine to anesthetize the tissues than with the average individual. I believe that most of the failures of spinal anesthetics are technical failures, or failures in judgment of type or quantity of anesthetic solution, but I also think that there may be a small group in whom it is due to an increased resistance to the action of the anesthetic drugs. Certainly the percentage of failures should decrease as the anesthetist gains in experience.

From my limited experience I have come to the conclusion that there are a number of groups of patients that I feel are better subjects for spinal anesthesia than for other types. I would like to briefly list these.

1. Those robust, heavily muscled individuals who are especially difficult patients for satisfactory general anesthesia, particularly for the upper abdominal operations.
2. Cases of intestinal obstruction unless they are in extremely poor condition when any operative procedure more extensive than enterostomy under local infiltration would be fatal.
3. Surgery of the colon.
4. Ventral hernias, where the relaxation is such a great help to the operator. Inguinal and femoral hernias likewise are very conveniently done under spinal anesthesia, and when strangulated are much better done with spinal, as other types of intestinal obstruction.
5. Patients who are to have a prolonged operation, when a spinal may be given for the first part, anticipating that it will perhaps be necessary to use supplementary anesthesia for the last part.
6. For hemorrhoidectomy, anal fistula operations, and perineal plastics.
7. All prostatic obstructions, or surgery for bladder pathology.
8. Most operations on the kidney and ureter.
9. Operations below the diaphragm in the presence of any kidney pathology, diabetes mellitus, jaundice, hay fever or asthma.
10. In the case of suspected pulmonary pathology, or for those emergency operations which must be performed in the presence of some respiratory infection.
11. For those individuals who have taken a poor or unsatisfactory general anesthesia previously, or for those who are anxious to remain conscious during the operation.
12. A certain group of the aged patients. It is true that this is one of the fields where spinal anesthesia is dangerous, but oftentimes any other anesthesia is even more dangerous.
13. In a number of patients who are in too poor condition to take any other type. In this group we are sometimes forced to disregard factors that normally would be contraindications for spinal anesthesia, if it becomes a matter of necessity.

Maxson has expressed the indications very well when he states that spinal anesthesia is indicated for operations in which it "is more efficient or less dangerous than general and in which local anesthesia is either too arduous and time consuming or inefficient." Each case must be judged on its own merits, and there will be certain ones of the types enumerated above where some other factor will argue against spinal anesthesia, as there will be others not listed for whom it will seem advisable.

As there are types of patients who should have the benefits of spinal anesthesia, so there are some who should not be given this type of anesthesia if

any other can be safely used. Among these are the following:

1. Patients who are opposed to having a spinal, or those who want to go to sleep during the operation. I do not believe spinal should be forced upon any patient who does not want it, unless of course there is some really sound reason for its use other than the preference of the surgeon.
2. Any patients who have had trouble with their backs or legs in the past. Whatever complications or developments would follow would almost certainly be blamed on the spinal injection.
3. Patients with any disease of the central nervous system, including latent nervous system syphilis.
4. Any infection of the skin at the site where the puncture might be made, or the presence of a draining wound near enough so that there might be contamination of the skin from that wound. The introduction of any infection into the subarachnoid space is too great a calamity to take any chances of this sort.
5. It should not be used by the average surgeon or anesthetist for operations above the diaphragm. Total spinal anesthesia has been used (and intentionally) by some experienced men, but it is too hazardous for the average anesthetist to use—in fact I think it is probably too hazardous for an expert to use with the other anesthetics available today.
6. Hypotension and hypertension may be contraindications. However, there are some in my series with hypertensions as high as 230/110 and several with a systolic blood pressure of eighty-five or ninety mm. and they have undergone the operation without difficulty. The matter of control of blood pressure and the dangers which may accompany the extreme fall sometimes seen in the hypertensives should be considered, and carefully planned measures taken if it is to be used in these groups.

There are several "do's and don'ts" which I think are worthy of mention in order to avoid some unnecessary complications.

1. Always keep an anesthetist with the patient during the operation. A patient under the influence of a spinal anesthetic deserves the observation and attention of an anesthetist just as much as if he were asleep from a general anesthetic, and of course there is always the possibility that measures may be necessary to correct a fall in blood pressure or relieve other complications, as well as the ever-present possibility of needing a supplementary anesthetic.
2. Do not inject any air bubbles with anesthetic solution. This is not because the air itself is harmful, for we know that large amounts of air are injected in encephalography, but an air bubble in the spinal canal, which runs up and down with the change in position of the patient causes a mixing of the spinal fluid and the anesthetic which is beyond control, and we lose completely the carefully calculated means of regulating the level of distribution of the anesthetic.
3. Use extreme care in technique to avoid infection of the subarachnoid space.
4. Do not inject the anesthetic if the spinal fluid is turbid.
5. Do not inject the anesthetic if the spinal fluid is bloody. In this case if the fluid will not flow clear after a rotation or slight change of position of the needle, make a new puncture in a different interspace.
6. Try to get a good flow of fluid from the needle. One which drips but cannot be aspirated freely may be satisfactory, but there is also a good chance that it will be a failure.

CONCLUSIONS

I believe that spinal anesthesia has an important role to play in surgical practice. I do not advocate it as an anesthetic to replace all others, but as one to be used when indicated and avoided when contraindicated. I believe that some patients can be carried through an operation under spinal anesthesia who would probably not make the grade under other types, and I believe that others can be operated with no more risk and with a smoother convalescence than with general anesthesia. I am firmly convinced that it is a mistake for a surgeon to feel that he can give a spinal and then operate without having anyone to watch his patient. The only exception would be the use of a sacral segmental spinal anesthesia, but a spinal is a true anesthetic just the same as ether, cyclopropane, or pentothal, and the patient who has had it should be under as careful observation as the patient under any other anesthesia.

A group of 400 consecutive cases has been studied to determine the efficiency of anesthesia, the undesirable side effects, and the complications. I feel that the results obtained in this group warrant its continued use, with the expectation that my experiences in these cases will make it possible to improve the results in subsequent uses of this type of anesthesia.

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If a doctor's life may not be a divine vocation, then no life is a vocation, and nothing is divine.—Stephen Paget.

THE RELATION OF THE STATE BOARD OF HEALTH TO THE PRIVATE MEDICAL PRACTITIONER*

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There is, inherently, the closest relation between the Kansas State Board of Health and the doctors of medicine in private practice in the state. When the state health department was established, by act of legislature in 1885, it was stipulated that the Governor, "With the advice and consent of the senate, shall appoint from different parts of the state nine physicians, who shall be men of good moral character and temperate habits, distinguished for their devotion to the study of medicine and allied sciences, of not less than seven years' continuous practice in their profession, and each of whom shall be a graduate of a reputable medical college; and said nine physicians, when so appointed and confirmed, shall be known as The Kansas State Board of Health[1]."

From that time to the present the development of the state health department has been guided by the nine physician members, and a lay member who was later added to the board by act of the legislature, and who was to be, "one other person, not a member of the medical profession, (preferably an attorney interested in sanitary sciences.)"[2] These men have earnestly and conscientiously endeavored to put into practice a program designed to improve sanitary conditions, to foster health education, and to reduce the spread of communicable diseases.

The state department of health, through the action of its board members, has been developed in accordance with the advances made by medical science and with progressive methods evolved by leaders in public health in the field of preventive medicine.

In a recently published book, "Ways to Community Health Education", Dr. Ira V. Hiscock, Professor of Public Health, Yale University School of Medicine, says, "The force of a community health program is directly influenced by the strength of the health department's association with the medical profession. The wise health educator considers the physicians practicing in his community as outposts on the firing line in the battle for public health. They are in a position to serve effectively in public health education, and therefore should be provided with ammunition. It is the health educator's duty to keep them supplied with information regarding public health programs, directly through medical society meetings and by special publications of the health department, and indirectly through the press and radio."[3]

This link, so close as to be inseparable, between the state health department and the physicians in private practice is not a modern idea—it is so old as to be basic, since, when the American Public Health Association was formed in 1872, Ravenel, in his book, "A Half Century of Public Health", said "No more opportune time could have been chosen for the formation of the American Public Health Association. The art of medicine was becoming the science of medicine; modern preventive medicine was being born. The discoveries of Pasteur had substituted the bed rock of science as a foundation on which has been erected the wonderful structure of medicine as it exists today."[4] Ravenel also stated that modern public health practice may be said to have been born at the first meeting of the American Public Health Association in 1872. "Local Boards of health began to require reporting of the more important contagious diseases about 1870. Environmental sanitation became a secondary activity of the health department, and control of communicable disease a major function. Providence, Rhode Island, established the first diagnostic laboratory in 1888. New York City followed in 1894. Tuberculosis began to be recognized as a communicable disease and not a family taint, and was made reportable by health departments about 1895. Diphtheria antitoxin was introduced in 1894 and was adopted almost at once, with relatively little of the controversy that harasses so many of the important medical discoveries, before they became incorporated in public health procedure."[5] This statement was made by Dr. Wilson G. Smillie, Professor of Public Health Administration in the Harvard School of Public Health. It is obvious that the close co-operation of the medical profession with their health departments was the basic requisite for accomplishing improvement in the health of individuals, and in the mass, public health. These two forces, working together for the good of the people they serve, have achieved a large measure of success.

Dr. Milton J. Rosenau, one of the distinctive authorities on public health today, formerly director of the Harvard School of Public Health and the Massachusetts Institute of Technology, says in his book, "Preventive Medicine and Hygiene," "Public health administration is the science and the art of organizing and operating governmental agencies whose purpose it is to improve the physical well-

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being of the general population. It aims at the promotion of health as well as the prevention of disease. It deals more particularly with mass phenomena of the community than with the problems of the individual, despite the fact that public health is the sum total of individual health."[6] In the same chapter Doctor Rosenau also states that, "Public health administration is able to accomplish its basic functions only when under professional control. The entrance of politics as the controlling force is hazardous, and sometimes disastrous to a smoothly functioning organization.... Public health should establish relations with medical, nursing, veterinary, engineering, and other professions. A good health program cannot succeed in face of opposition of the medical profession".[7]

We have cited the interdependence of public health work and that of the medical profession, as voiced by some of the national leaders in public health. Now let us consider the situation, as it has developed in Kansas.

When the state board of health was created, by act of legislature in 1885, the office consisted of a part of a room, and the personnel included the executive secretary and his stenographer. At present, the department is crowded into four large rooms in the state house, additional quarters for the central public health laboratory and the child hygiene division at 933 Kansas avenue, the division of sanitation headquarters at Kansas University, where the water laboratory is maintained, the food and drug laboratory service performed at Kansas University and Kansas State College, and the branch public health laboratory at Parsons. The employes of the state health department now number 168, and many of these people are voluntarily working overtime to keep up with the work of their various divisions.

Within the memory of many of us, the standards of the medical profession have been elevated. In 1910, the Carnegie Foundation for the Advancement of Teaching, published their Bulletin Number four, on "Medical Education in the United States and Canada". Speaking of educational prerequisites for doctors of medicine the report reads as follows, "The enforcement of even the four year high school standards will so far clean up the medical field that the state boards of medical examiners will at once be relieved of dealing with actually disreputable medical schools."[8]

In 1910, Kansas with a population of 1,663,438, had 2,650 physicians and three medical schools. The entrance requirement for the Kansas University School of Medicine was two years of college, and the attendance numbered eighty-nine. The Kansas Medical college which was established in Topeka in 1890, required a four year high school course or its equivalent for entrance and the attendance in 1910, according to the Carnegie Foundation report,[9] numbered sixty-five, with no full-time instructors in the school except in chemistry, which was taught at Washburn College. The third medical school in existence in Kansas in 1910, was the Western Electric College of Medicine and Surgery, which was organized as a stock company in 1898, with the entrance requirement defined as "nominal" and the enrollment stated as twenty-one, in 1910, by the Carnegie Foundation report.[10]

The foregoing excerpts from the published report are in no wise quoted to cast aspersion on the medical schools or the medical profession of thirty years ago—they are quoted to emphasize the healthy development and elevation of medical school standards in the state. The Kansas University School of Medicine is accredited by the American Medical Association; its entrance requirements include three years of pre-medical college work, with high scholastic standing, and enrollment is restricted to eighty-five students, although raising this number to ninety-five is being considered at present; the total enrollment for the year 1938-39 was 328 students, and the present year is approximately the same.[11] The development of this school of medicine has been wisely supervised, and it is an institution of which all Kansans may well be proud.

The growth of the state health department, as guided by its board members, has been greatly accelerated by the assistance, financial and advisory, of the United States Public Health Service and the Children's Bureau. Without this assistance, Kansas, with its appropriation of less than four cents per capita for public health administration, would be seriously crippled. This help from the United States Public Health Service and the Children's Bureau has been of direct benefit to the physicians of the state, and through them, to the public health. The promotion of milk sanitation; the equipment and extension of the services of the public health laboratories; the presentation of postgraduate courses in pediatrics and obstetrics, venereal disease, tuberculosis and cancer, all of which have been given by outstanding specialists in the various subjects, and were offered free of charge to all doctors of medicine in the state, with the state and local medical societies co-operating in making arrangements for the presentation of these courses; during the last year, drugs furnished free to Kansas physicians for treatment of their patients cost the state health department $15,000; the department was able, through the assistance of federal funds, to make a direct grant of $5,000 to the Kansas University School of Medi-

cine for research in osteomyelitis; the public health nursing service, which is strictly a health education unit; the purchase of baby incubators for loan to physicians in the care of premature infants; the training of department personnel for efficient service in public health, under which plan it has been possible not only to give this valuable special training to a number of Kansas nurses, but to some Kansas physicians who are now on the staff of the department. All of these activities of the state board of health have been coordinated with the health objectives of the medical profession. These services in no wise supplant the physician in private practice, but complement and augment the basic aim of the doctors of medicine—the improvement of the health of our people.

To demonstrate the foregoing statement more specifically, let us summarize the activities of the various divisions of the state board of health, and determine wherein they are allied with and dependent upon the co-operation of Kansas physicians in private practice.

The child hygiene division, the function of which is the promotion of child and maternal welfare, distributes a vast amount of free literature, upon request, with the Kansas Mother's Manual by far the most popular pamphlet. This manual, revised in 1936 with the assistance of obstetrician and pediatrician members of The Kansas State Medical Society is in constant demand—25,000 copies were requested in seventeen months—not only by expectant mothers, but by physicians who ordered the manual in lots of twenty-five or fifty copies. The Mother's Manual, as does all other health educational literature prepared in the health department, recommends the services of the family physician, stressing the importance of proper parenatal, natal and postnatal medical care for the expectant mother. The child hygiene division, through its nursing program, has assisted in providing full-time public health nurses in twenty-nine counties in Kansas, where the nurses (many of whom have been given special training in public health) work closely with the members of the county medical society, confining their efforts to health education. The postgraduate courses in pediatrics and obstetrics, mentioned previously, have been well received by the physicians in private practice throughout the state; following these courses, printed or mimeographed copies of the lectures were sent to physicians as reference material. A survey showed the lack of incubators for the care of premature infants in the state—and the child hygiene division purchased, and has placed to date a total of eighteen heat controlled and forty-six hot-water heat controlled incubators, in places of greatest need. These incubators, placed usually in care of the county public health officer or nurse, are made freely available to physicians in private practice, and have shown a high record of infant survivals. One physician was much gratified to write to the child hygiene division, of the survival of a premature infant weighing less than thirty ounces at birth. Through the combined efforts of this division and the medical profession, maternal and infant death rates in Kansas are slowly declining.

The school health examinations, requested by the county superintendents of public instruction, and conducted with the approval and assistance of county medical societies, are inspections which bring to light many obvious defects. These inspections, in which local physicians assist and are compensated by state health department funds, are in no wise thorough medical examinations—no diagnoses are made and no treatment administered, but children in whom these defects are found are referred, through their parents, to the attention of their family physicians. The well-baby conferences are conducted on the same plan, with local physicians assisting and paid for their services. These programs placed the actual sum of approximately $14,000 in the pockets of Kansas physicians last year, besides the unknown sums derived from suggestions made by public health workers that medical attention be sought from the family physician.

By the year-round health educational program, conducted through weekly and daily newspapers, the radio, talks by staff members, and in all publications of the state health department, the public is constantly advised to seek medical aid for any ailment or abnormal condition, to have periodic physical examinations by the family physicians, to safeguard their children by having protective treatments against diphtheria, smallpox and typhoid fever administered by their family physician. This instruction, reiterated year after year, has undoubtedly resulted in the addition of thousands of dollars annually to the income of Kansas physicians, and in the increased health, happiness and usefulness of the persons who sought medical care.

The division of communicable diseases is also closely allied with physicians in private practice, depending upon them for faithful reporting of various diseases, and, in turn, mailing to all physicians of the state, the weekly morbidity reports, by which are reflected health conditions in the state. These reports keep the medical profession constantly informed of health problems and progress. The communicable disease division furnishes diphtheria toxoid, smallpox and typhoid vaccine to all physicians, upon request. The city and county-wide diphtheria

immunization programs, sponsored by the state health department, have been successful because of the co-operation of county medical societies and local governing boards. The treatments are administered by local physicians, who are paid a nominal fee by the governing agency. This plan has resulted in the immunization of thousands of Kansas children each year, and the attendant publicity has prompted many parents to have the treatments administered to their children by family physicians. Results of the co-operation of the county medical societies with the state board of health are conclusively evidenced by Kansas morbidity and mortality reports on diphtheria: in 1921, 7,849 cases and 382 deaths were reported in the state, and in 1939 we had the all-time low of 257 cases with eight deaths. In 1939 alone, the state health department distributed to physicians sufficient toxoid to immunize 33,000 Kansas children. The state epidemiologist is at the service of physicians who think it advisable to have special investigation in cases or epidemics of communicable disease.

One of the basic activities of the health department is the registration of vital statistics, and the analysis of this data. The private medical practitioner determines the completeness and accuracy of the records of birth and death, and through them the status of health and population is determined. This information is relayed to physicians and to the public, and supplies the very basis of the health program.

The maintenance of a competent diagnostic and research laboratory, which manufactures such biologicals as are possible, is a mandatory function of the efficient health department, in the control of communicable diseases, and offers a medium of valuable service to physicians in private practice.

The division of tuberculosis control carries on a year-round program of education, strongly augmented by the school-wide tuberculin testing programs, which are conducted through the co-operation of the county medical societies, and which have resulted in the reference of many positive reactors to their family physicians for thorough examination. This program has not only brought to light active and incipient cases of tuberculosis, but has led to the discovery of the source of infection.

The encouraging increase in the number of venereal disease cases reported and placed under treatment in Kansas during the last few years, has been accomplished by assistance, financial and advisory, from the United States Public Health Service, and by the faithful co-operation of physicians in private practice, some of whom assist in the venereal disease clinics. Every doctor of medicine is aware of the magnitude and seriousness of the venereal disease problem, in the nation as well as in Kansas. Obviously, the physicians in private practice comprise the key division, in the fight against venereal disease. The postgraduate courses in venereal disease, presented by distinguished members of The Kansas Medical Society, Dr. Arthur D. Gray and Dr. J. V. Van Cleve, have been well-received by the medical profession. The venereal disease control program has succeeded in bringing thousands of cases under treatment, in educating the public to consider syphilis and gonorrhea as infections rather than moral stigmas and to seek examination and treatment from the only reliable source—the doctor of medicine. The venereal disease clinics, approved by local medical societies and conducted by Kansas physicians who have made a specialty of the treatment of these diseases, are helping to solve the serious problem of checking venereal diseases in the medically indigent. The advances made so far have been made possible only by the co-operation of physicians in private practice, and can be carried forward until these diseases are under control, only with the continued support of the medical profession. The finest public health program, from the point of need and practicability, will fall to pieces completely, without the approval and help of physicians in private practice.

Side by side with the medical profession and the public health officer, in years gone by, the sanitary engineer, the food and drug inspector and the milk sanitarian, have performed their invaluable services in the protection and the improvement of the health of the people.

Through its division of local health, the establishment of full-time health departments, and the selection of personnel for special training in public health is effected. Several physicians practicing in the state, have been given this graduate training and, working with the local medical societies, are rendering valuable service in public health.

In recent years, tuberculosis has lost its traditional place as one of the ten leading causes of death. 1939 set a new low in deaths from scarlet fever, pneumonia, whooping cough, diphtheria and tuberculosis. Maternal and infant deaths are declining. Accidental deaths are gradually being reduced. Schools, civic and social groups—the public, as individuals and in the mass, is intelligently interested in health education. This upward trend in health conditions could only have been effected by the close co-operation and mutual support of the physicians of Kansas and the state health department.

As secretary of the state board of health, and in

behalf of your colleagues, the board members, I wish to take this opportunity to thank the medical profession of Kansas for its sustained and loyal assistance in the health programs projected by the state health department, and to express the sincere hope that this relation may always prevail.

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ARTHRITIS—THE GREAT RESPONSIBILITY AND OPPORTUNITY*

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Because of the nature, prevalence and economic toll of arthritis and related diseases, they constitute a major responsibility and opportunity for medical men and laymen alike.[1,2]

This discussion relates solely to needy patients and is not concerned in the slightest degree with those who are financially able to pay for medical services.

The need for an arthritis campaign is both definite and urgent and as a highly important aspect of the nation's health we believe that the responsibility for the operating activities of such a campaign properly belongs to existing official public health units (state, county and municipal), rather than to local or national special voluntary associations.

The reason for this point of view do not cast the slightest reflection upon the established excellence of either the American Rheumatism Association or the American Association for the Study of Arthritis and are based solely and entirely upon the concept that the nation's health is a single interest with different aspects. Obviously a successful arthritis movement will of necessity require a high degree of cooperation from these and other voluntary groups.

The development of a campaign against arthritis and the problems of research, early diagnosis, prevention, hospitalization, etc., are therefore considered primarily from an organizational viewpoint.

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BACKGROUND OF THE PROBLEM

Besides the rather wide spread impression among the liaty that "almost everybody just has to have more or less arthritis sooner or later,"[1] there is also the equally general and erroneous idea that the members of the regular medical profession haven't much to offer by way of successful treatment. In fact, it is this combination of fallacious assumptions that furnishes a great deal of the background of the problem.

About fifty per cent of all patients who suffer from any chronic disease turn to chiropractors, naturopaths, patent medicine vendors, etc.; but in our study of 343 cases of atrophic arthritis[3] approximately seventy-five per cent "took flyers" in these directions. This aspect of the situation, which has its roots in a profound degree of scepticism, is one of the greatest deterrents to progress.

STATISTICAL HIGHLIGHTS

There are more sufferers from rheumatic diseases than from the combination of heart disease, cancer and tuberculosis. Moreover, among chronic diseases in this country, arthritis and rheumatic diseases not only rank first in prevalence, but also hold second place for disability and invalidity.[1]

The average duration of lung tuberculosis is only about three years, cancer exacts its toll, as a rule, in one-half of this period; but, invalidity from arthritis often extends over twenty or thirty years.[4]

STAGES OF THE CAMPAIGN

The stages in the development of successful social movements—including the conquest of arthritis—are well known and may be termed: (1) Investigation, (2) Agitation, (3) Organization and (4) Coordination.

In the first stage (investigation), the fundamental and essential roles of scientific and statistical research are clearly apparent; and much has already been done by way of accumulating information regarding the nature and extent of the problem with which we are confronted. Its devastating economic consequences are also known.[1]

The second stage (agitation), relates to the ways and means by which publicity is carried out and the support and interest of individuals and groups—both lay and professional—are solicited.

ORGANIZATION

When we come to the third stage (organization), we must make up our minds about the functions and responsibilities of official health bodies versus those of voluntary associations.

One of the great arguments in favor of separate associations with special interests has always been

that we Americans are only reactive to spectacular catastrophies and disasters. Tuberculosis, by way of example, with its former high death rate and alarming incidence offered an outstanding opportunity for intensive efforts in this special field. One of the reasons why the National Tuberculosis Association promptly developed so much highly specialized momentum was the number of deaths in all strata of society coupled with propaganda to the effect that "no one ever died of Public Health."

At least this particular line of reasoning cannot be logically advanced as a justification for a National Arthritis Association because the deaths from arthritis and all forms of rheumatic disease are only about four per 100,000 persons.[4] Moreover, it is not a communicable disease.

It would seem logical to assume that the interest of any group or community should be the promotion of health in the most effective and economical manner. But when the organizational set-up involves divided authority and responsibility among separate groups with special interests, these different associations are in the position of business concerns that audit their own books. In their appeals for moral and financial support and in their publicity campaigns to keep the public informed of their achievements, their claims are quite naturally based upon their own evaluations of their own particular accomplishments.

It may be granted that the stages of investigation and agitation of any great social undertaking may be carried on with greater speed under the auspices of separate national voluntary organizations and without serious impairment of either efficiency or economy; but when strong independent associations have been built up, coordination can only be accomplished with great difficulty, if at all.

It would therefore seem to be of fundamental importance that the development and evolution of the campaign against arthritis and rheumatic diseases be visualized from the start as merely another aspect of a single interest—the nation's health—so that from the viewpoint of organization and coordination nothing will stand in the way of the advancement of efficiency, economy and the public welfare. Swift has expressed a similar opinion with regard to rheumatic fever.[6]

COORDINATION

Whatever may be the procedure with regard to the stages of investigation and agitation, let us consider briefly the possibilities and advantages of developing the organizational and the coordinative aspects of the arthritis movement under existing health agencies.

In the first place, it has been clearly demonstrated that dietary indiscretions, defects in personal hygiene, occupational factors, exposure to dampness and cold, poor housing conditions, worry, fatigue and a long list of other causes merit consideration,[5] both individually and collectively, with diseased tonsils and other infections, to the end that the problems of prevention and treatment lead us into the fields of physiology, chemistry, mechanics, economics, hygiene, housing, sanitation, etc.

From such a wide range of diverse causal factors it becomes obvious that, at least from the viewpoint of preventive measures, benefits would by no means be limited to a reduction in the incidence of arthritis and rheumatic diseases. Moreover, it has been amply demonstrated by health authorities in this country and abroad that such dissimilar clinical entities as arthritis, tuberculosis, pneumonia and exteritis have a common dependence upon the social and economic backgrounds of their victims.

Also, it has been the experience of many health officials that the greater the progress toward the eradication of any special disease, the more evident has become the relationship of that particular achievement to other health problems and the more apparent has become the fact that the health of the community is in reality a single interest with different aspects.

The advantages of a unified program would not appear to require further comment and the practical application of this idea or principle is now before us.

PRINCIPLES

Regardless of variations in the details of the ways and means for improving the nation's health, it is generally recognized that the health of the people is a direct concern of government—both local and national. Moreover, the principle that the care of the public health is primarily a local responsibility is beyond all question; and means that in the establishment of policies as well as in their administration this obligation must not be neglected.

We need not concern ourselves here with the outcome of the different efforts toward the establishment of what is referred to as "Socialized Medicine" or "State Medicine"; nor do we need to enter upon a detailed consideration of the division of the nation's health into its precise percentages of public health and private health.

Furthermore, there would seem to be no serious conflict of opinion with reference to the following:

First, changes in economic and social conditions at home and abroad demonstrate that medicine must be mobile and not static.

Second, the problems of both private and public health are of vital concern to economists and sociolo-

gists as well as to the practicing physicians and health officials.

Third, throughout our forty-eight states there are sufficient variations in the climatic, economic and social conditions to justify the conviction that no single plan for the advancement of the nation's health would be either desirable or feasible.

Fourth, whatever changes in the present system may be ultimately adopted, the transitions should be gradual and based on demonstrated needs.

Fifth, and lastly, the closest cooperation financially and otherwise of voluntary agencies, local, state and federal governments is a fundamental necessity.

Now, all of these broad generalizations upon the subject of private and public health not only have a direct relationship to the arthritis problem—which is merely one aspect of the health situation—but also, the most effective and economical organization to combat arthritis must be based upon these concepts.

Physicians have already urged the appropriation and allotment of funds for campaigns against maternal mortality, veneral disease and cancer; therefore they would not oppose similar financial grants for a campaign against arthritis.

It is true that some states have sought financial aid in the absence of demonstrated needs proportional to the amount of the funds solicited; but legislation is specific upon the point that Congress has the power to require that appropriations be allotted only upon the presentation of proof of actual need.

Fundamentally, it is in connection with the principle that the care of the public health is primarily a local responsibility that the greatest possibilities of trouble—as well as advantage—are to be found.

When individual states, or any of their composite units demand that the federal government take over the financing of any of their problems—whether it be improving their streets or their health—it obviously follows that politics will play a dominant role in the expenditure of such allottments. And no one can logically take issue with the politicians whenever this happens.

In accepting the principle of local responsibility no community can successfully dodge the economic obligation that is entailed.

SPECIAL ASPECTS OF ARTHRITIS

It is customary to emphasize the analogies between the arthritis and tuberculosis problems—which closely parallel one another in many ways; but, in doing this we must keep clearly in mind that another special voluntary national association is not the answer from the viewpoint of procedure.

Arthritis and rheumatic diseases are characterized by about the same degree of universality as tuberculosis. Even animals are subject to arthritis and many species are known to have been its victims. Among members of the human race, no individual seems to be either too young or too old to be out of range.

CLINICAL TYPES

In somewhat the same way that the clinical type of tuberculosis varies in infants, juveniles and adults, we find that arthritis and rheumatic diseases are characterized by variations in their manifestations for different age groups.

While middle-aged adults are not immune to acute rheumatic fever, it is, nevertheless, more common in children who also have a modified type of infectious arthritis that is called "Still's disease."

Crippling and deforming rheumatoid or infectious arthritis is more generally prevalent before age forty-five than later,[3] but it is by no means exclusively limited to patients in the younger age groups; and like tuberculosis, it is particularly prone to affect those who are not in vigorous health.

Osteo-arthritis and gout are the varieties that are ordinarily found after middle age.

RESEARCH

In every phase of medical practice, continued progress is inseparably linked with both scientific and clinical investigation, and arthritis and rheumatic diseases are not exceptions to this postulate. At the present time there are entirely too meagre funds available and for too few institutions devoted to research in arthritis.

EARLY DIAGNOSIS

It would be utterly trite to amplify an aspect of the problem that is so obvious.

Even though it is clear why early diagnosis is fundamentally important, it may not be so obvious as to how these diagnoses are going to be turned out on a sufficiently big scale to meet the demands of the situation.

With several times as many millions of arthritics as there ever were tuberculous victims, the difficulties of the arthritis problem are infinitely greater.

It is clearly apparent that we should have the same degree of teamwork between general practitioners and specialists as pertains in individual instances for other diseases; but the vast number of arthritics in the United States precludes any solution to the problem of early diagnosis unless the general practitioner is cast for the leading role.

PREVENTIVE MEASURES

There is some question as to how intensively preventive measures should be developed solely as a part of the arthritis campaign, per se.

It has already been pointed out that activities of a preventive character (in addition to embodying

personal elements relating to individual patients), are concerned with hygiene, economics, housing, sanitation, etc.

It would appear, therefore, that the prevention of arthritis and rheumatic diseases is in reality just another aspect of the community health problem and should be so regarded from an organizational point of view.

In this connection, as well as in the matter of hospitalization, it should be borne in mind that there are at least fifty per cent more patients in the lower income brackets than among the well-to-do.

HOSPITAL CARE

Attention has been called by Snyder[2] to the lack of hospital facilities for patients with chronic arthritis. General hospitals and private institutions are equally bereft of free beds for these patients; and such beds probably do not number more than a couple of hundred throughout the United States in comparison with more than 100,000 for patients with tuberculosis.[2]

At first sight, this situation seems to reflect an astounding degree of indifference and neglect without any mitigating factors or circumstances. However, the frequently mentioned analogy between arthritis and tuberculosis does not and should not apply to the matter of hospitalization. In the first place, it is highly important to recognize the difference between chronic arthritics—who are mechanically disabled and not ill in the strict sense of the word—and patients with tuberculosis who are not only sick, but also are suffering from a communicable disease.

Arthritics, who are seen in the early stages, are not, as a rule, benefited by prolonged periods of institutional treatment. Unlike the tuberculous, for whom months of rest are often necessary in order to bring about quiescence and arrest, the average arthritic is a most satisfactory ambulatory patient. And, in connection with the diagnosis and treatment of ambulatory arthritics, the American Rheumatism Association has established Minimal Standard Requirements for Arthritis Clinics.

The question of hospital care for chronic arthritics is not an urgent problem of providing tens of thousands of free beds as a fundamental factor of prevention and treatment, but merely a part of the well-rounded institutional program of every community for the hospitalization of its needy and disabled.

SUMMARY

The stages of a campaign against arthritis have been outlined. Its organization is predicated upon the concept that the health of a community is fundamentally a single interest with different aspects and that the primary responsibility therefore belongs to official public health agencies. The fact that dissimilar diseases (among which may be mentioned arthritis, tuberculosis, pneumonia and enteritis), have a common dependence upon similar social and economic backgrounds would seem to support this point of view. Throughout the United States under state, county and municipal health authorities, numerous clinics already exist and they should serve as the basis for the arthritis campaign.

The principles of the procedure, regarding which no serious differences of opinion seem to exist, have been noted and some of the special aspects of the arthritis problem have been considered.

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THE NON-EFFECTIVENESS OF METRAZOL THERAPY IN THE TREATMENT OF SCHIZOPHRENIA (DEMENTIA PRAECOX)

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When von Meduna first proposed the convulsive shock therapy for the treatment of schizophrenia (dementia praecox), he made certain claims as to its effectiveness which have not been confirmed by the experiences of investigators and observers during the past five years. At the time that the treatment was first proposed, schizophrenia was considered to be a chronic, more or less progressive and usually hopeless condition. This attitude was confirmed by numerous reports such as Fuller's[1], who showed that only 18.5 per cent of a large group of patients with this disease had been discharged from a mental hospital within one year, and 24.2 per cent had been discharged in two years. Romano and Ebaugh[2] made a careful study of this problem. They analyzed the present state of 600 patients who had been diagnosed schizophrenic in the psychopathic department of the Colorado General Hospital between the years 1933 and 1936, and concluded that:

"At the present time the prognosis of the schizophrenic psychoses is very poorly understood. It is apparent that this is due to their heterogeneity; the unreliability of the various catamnestic studies, most of which are based on social criteria; and the lack of reliable prognostic criteria in the individual cases. We have attempted to point out a number of variables that can and should be controlled in order to gain further and clearer insight into the natural course of the schizophrenic disorders."

As a result of their studies, they found that only one patient out of the 314 examined had a complete remission, and only twenty-two showed marked improvement (0.32 per cent and 7.01 per cent, respectively). Of the 600, information was obtained from 454, of whom 247, or 54.4 per cent, were in a psychopathic hospital. Of the 45.6 per cent who were not in a hospital, many had shown no improvement. A percentage of 7.33 might be taken as their figure of good results which had been obtained by therapeutic measures of a non-shock type: rest, seclusion, diet, support, occupational, recreational, physical, and psychotherapy.

Strecker[3] analyzed many previous reports on the results of non-shock procedures, and found that these results, as reported, varied from 3.4 to forty-eight per cent well or improved at the time of discharge, or an average of 23.6 per cent of a combined series of 2,460 cases.

The criticism of these reports is aptly expressed by the quotation from Ebaugh and Romano given above. Markedly different criteria must have been used to have obtained such a wide variation of results.

Whitehead[4] points out that twenty-five per cent of schizophrenic patients admitted to the Utica State Hospital before the use of insulin and metrazol had spontaneous remissions, although most of these relapsed. Gelperin[5], in a recent report on 235 cases, gave a statistical summary of forty per cent improved to the point where they could be discharged. He does not break this up into remissions, marked and slight improvement, and his findings are superior to those of Romano and Ebaugh. If we add their (Romano and Ebaugh) group of slightly improved cases to the above figure of 7.33 per cent, we get 23.57 per cent that showed some improvement. Romano's and Ebaugh's series is a several years' follow-up, while Gelperin's is for immediate discharge.

Thus it would seem that the statistical average for improvement from non-shock therapy, in patients who had been out of the hospital for some time, should be somewhere around twenty-five per cent. These patients are not all well, but are simply well enough to be home.

Any procedure must have seemed an improvement even if it helped the situation only slightly or reduced the chronicity. It is the concensus of opinion that metrazol does produce a rapid, apparent improvement in many cases, but these results are of poor quality and not sustained.

Eisner and Orbison[6] reported upon the results of personality evaluation (Rorschach method) upon thirty-eight patients who were tested before and after their courses of metrazol shock. They concluded that while these patients showed a superficial clinical improvement, the Rorschach evaluation did not parallel this, but showed that fundamentally these patients were still schizophrenics.

During the past four years certain reports have been released which show that metrazol convulsive shock is not a satisfactory or effective treatment for schizophrenia. Ross and Malzberg[7] concluded that metrazol, on the other hand, produced even fewer recovered cases (1.6 per cent recovered and 9.9 per cent much improved of a total metrazol treated series of 1140 patients) than found in cases not treated by any shock therapy. (Control series of 3.5 per cent recovered, 11.2 per cent much improved.) This was confirmed by a cooperative report on 759 patients, recently published in Germany[8], analyzing 560 treated with insulin, 132 with metrazol, and sixty-seven with both. The insulin series showed 37.7 per cent symptom-free and 28.9 per cent improved. The metrazol series showed 18.9 per cent symptom-free and 37.1 per cent improved. Menninger[9] in a recent article reports that only seventeen per cent of his series of schizophrenics showed a social remission after a course of metrazol therapy. The results following metrazol treatment are actually lower than many figures for spontaneous remission, and we at the Neurological Hospital have practically discontinued its use as the sole agent.

The results at the Neurological Hospital showed in a series of twelve patients that three made a complete recovery, two showed enough improvement to go home, three improved slightly, and four did not improve at all. However, only two of these patients have maintained their improvement, so that we find that eighty-five per cent of this series is in a state hospital or at home, completely incapacitated. Since these patients were treated some months ago during the period when metrazol was being tried extensively, enough time has elapsed to prove that in this small series metrazol is not an effective treatment in schizophrenia if sustained results are desired. These discouraging results plus the above reports led to the discontinuing of this form of shock therapy in schizophrenia at the Neurological Hospital.

Metrazol still has a place in psychiatric therapy. It is almost as specific in the treatment of the affec-

tive psychoses, such as involutional melancholia and the agitative-depressive group. Without shock therapy, only thirty per cent of this group can be expected to recover after a period of illness of from one and one-half to three years. With metrazol, seventy per cent make a complete, sustained recovery, lasting in our series for well over a year, and twenty-five per cent show a marked improvement, so that they are well enough to go home and live a life of at least ninety per cent efficiency. These results are obtained in from four to eight weeks of hospitalization and metrazol therapy.

Insulin shock results in schizophrenia show that 37.3 per cent of all cases treated are well enough to be in the community, after two years have elapsed from the time their treatment was terminated. Of those treated during their first six months of illness, 61.5 per cent are still in the community, while those who were treated during the second six months, 47.7 per cent are still in the community. These figures are from Ross[10], group of 1039 cases treated during 1937 and 1938. Ross and Malzberg's[7] conclusions are significant. "This recovery and improvement rate in the cases of insulin-treated cases is significantly in excess of the rate of the control group." (1,757 cases in the group who were treated with insulin.)

SUMMARY

Published reports, statistical analysis and numerous observations show that metrazol convulsive shock is not beneficial or helpful in the treatment of schizophrenia. It should never be used as the sole agent. It does, perhaps, have some value as an adjunct to insulin shock in certain patients who have a marked depressive content in their total psychotic picture. Insulin shock is the treatment of choice in the management of schizophrenia.

Metrazol does have a valuable place in the handling of those psychotic syndromes which are characterized by marked changes in the mood (affective disorders) and should be used when other more conservative measures have failed. Insulin shock, on the other hand, apparently is not especially beneficial in these cases.

Psychiatry does not differ from other branches of medicine. An exact diagnosis is a prerequisite to any form of therapy. In light of recent developments and observations, it would seem that an exact diagnosis of the psychiatric disorder is of extreme importance in order that mistakes in selecting the proper therapy will not be made. Inaccurate diagnoses with resulting improper application of a therapeutic procedure will give a poor clinical result. These poor results lead to an unjustifiable loss of confidence in procedures which when properly applied to the right cases give relatively excellent results.

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LYMPHOSARCOMA INVOLVING THE EPIDURAL SPACE*

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Since anyone of the so-called "Lymphomatoid Diseases" is rarely encountered in the spinal epidural space, it was thought that the report of such a case might be of interest. It is of special interest when there is, as in this case, no clinical or roentgenographic evidence of any primary growth elsewhere before the development of spinal cord symptoms.

Generally speaking, malignant tumors may reach the epidural space from other areas by various routes as (1) by direct invasion from a contiguous involvement of bone, (2) by extension thru the intervertebral foramina, or (3) by hematogenous, and possibly lymphogenous, implantation from distant sources.

How can the so-called lymphomatoid diseases gain entrance to the epidural space? Apparently the most plausible explanation is that of extension from regional lymph nodes thru the intervertebral foramina. However, we cannot completely rule out the possibility of their arising primarily from small foci of lymphoid elements in the epidural space.

Guillain, Alajouanine and Perisson[1] claimed to be the first to report lymphosarcomatous involvement of the spinal cord. In their case there was an extra-

*Presented at a meeting of the Kansas Section of the Amerian College of Physicians, November 18, 1939.

medullary mass compressing the spinal cord with resulting paraplegia. However, the spinal lesion in this case was considered secondary and not primary in the epidural space.

Davison and Michaels[2] have reported seven cases of lymphosarcoma in which the central nervous system was involved secondarily.

Browder and de Veer[3] reported sixteen cases of malignant epidural tumors in each of which the initial symptoms were those of compression of the spinal cord or cauda equina. Also, in these cases, clinical and roentgenographic examination failed to disclose evidence that the lesion was not primary in the vertebral canal. Among their sixteen cases there were four cases of carcinoma, eight cases of lymphosarcoma, and one example each of giant follicular lymphadenoma, reticulum cell sarcoma, plasma cell myeloma and Hodgkin's disease. Most of these come under the group designated by Krumbhaar[4] as "Lymphomatoid diseases." Under this heading he included the following conditions: Lymphosarcoma, leukosarcoma, lymphatic leukemia, reticulum cell sarcoma, aleukemic reticulosis, Hodgkin's disease, granuloma fungoides, Mikuliczs disease, and allied states as agranulocytosis, monoblastic and monocytic leukemias, Cooley's erythroblastic anemia, infectious hemolytic anemia, and von Jaksch's disease.

These lymphomatoid diseases are practically all alike in having a fatal prognosis, though the duration may extend from few days to many years. The very great majority of these are very susceptible to radiation.

REPORT OF CASE

A white female, age fifty-one, was first seen on February 19, 1939, referred by Dr. Christman of Pratt, Kansas. She complained of paralysis of both legs and pain in the region of both shoulder blades.

She had been well until April 11, 1938, when she first noticed pain in the upper thoracic region posteriorly which has been present up to time of examination. She remained otherwise well until January 18, 1939, when she noticed numbness in both lower extremities followed by gradual progressive weakness until she lost practically all power of motion in the lower extremities. She had no sphincter disturbances at any time.

Examination: There was a bilateral spastic paralysis of both lower extremities with pathological reflexes and ankle clonus bilaterally. There was a level of hyperalgesia at the third thoracic spine. Passive motion and muscle position sence was lost in both lower extremities. Vibration sense was absent over the left lower extremity. Temperature and pain perception were disturbed on both sides below the sensory level. There was tenderness over the third and fourth thoracic spinous processes. The abdomen was distended.

Spinal puncture revealed a clear fluid with an initial pressure of nine mm. Hg. which on bilateral jugular compression rose slowly to 11.5 mm. and came down very gradually to nine mm. The cell count was one; and there was a slight trace of globulin; total protein was seventy-eight mgm. per 100 c.c.

Examination of the blood showed 4,350,000 red and 8,150 white cells per cubic millimeter. The hemoglobin was 13.9 grams and the differential count was normal.

The clinical diagnosis was spinal cord tumor at level of second thoracic spinal cord segment.

First Operation: On February 21, 1939, a laminectomy of the second, third and fourth thoracic vertebrae was performed by Dr. Hibbard. There were three lesions visible in the epidural space. At the level of the third and fourth thoracic vertebrae respectively there was a thick fibrous band of hypertrophied ligamentum flavum compressing the cord. Then, above these at the level of the second thoracic vertebra there was a grayish-black tumor mass lying on the dorsolateral surface of the spinal cord, compressing it. This tumor was about the width of half the index finger and was about two inches in length. The two fibrous lesions and as much of the tumor as could be seen were removed. No intradural lesions were present.

Histologically, the tumor growth was composed of cords and masses of round cells of small size. The nuclei were round or oval and very darkly staining. The protoplasm was unstained in most cells. The cellular strands were separated by thick fibrous septae. Blood vessels were thin walled and numerous. Diagnosis—Lymphosarcoma.

Course: Three weeks after the operation she received 200 r units daily over the upper thoracic spine until she had received a total of 4000 r units. She made an uneventful recovery and gradually regained function of her legs so that she was able to walk without support.

Three months after the above operation there developed a large and painless swelling in the region of the right parotid gland.

Second operation: The greater portion of this mass was removed from the region of the right parotid gland.

Histologic examination of this parotid mass showed, first of all, a small area of normal parotid tissue. Secondly, there was a type of structure which had the appearance of a mixed tumor of the parotid, being composed of strands of small cells separated by bands of fibrous tissue. Thirdly, large groups of round cells were seen, for the most part in the parietal lobules.

The microscopic diagnosis was: 1. Mixed tumor of parotid. 2. Lymphosarcoma.

Further Course: Following this second operation she received another course of x-ray. At this time 300 r units were given over the right parotid region for nine successive doses, making a total of 2700 r units.

She was apparently doing well until three months later when she developed a soft elevated mass over the sacrum which was considered to be metastatic in origin. For this she received another course of x-ray. This time a total of 2700 r units were given.

Two months later this mass had disappeared but she developed large masses in the abdomen which were considered to be enlarged lymph nodes. A total of 2000 r units were given over the epigastrium.

She died on November 20, 1940.

(Continued on Page 222)

President's Page

To the Members of The Kansas Medical Society:

In beginning another year of Kansas Medicine, I wish to express my appreciation of the honor bestowed upon me as your President. Let us all, as officers and members of The Kansas Medical Society, pledge ourselves anew in loyalty to our local, state and national societies in the effort to maintain the highest standard of medical and surgical practice in our state and nation.

Many are our state and local problems that will require continuous effort on the part of all. Let us not become passive because of apparent past successes in a few of many problems that confront us as an organized professional group. Naming a few to refresh our minds: The medical defense program; care of the indigent; care of the low-income group; lay educational efforts further to reduce the morbidity and mortality, in our population, as pertains to cancer, tuberculosis, heart disease, and others that might be mentioned; the immunization field in preventive medicine; the improvement in maternal and child welfare; the eradication and control of venereal disease and other fields worthy of our most careful consideration. May we continue the program of post graduate study so ably carried on in the past years, and if possible enlarge upon this field of self-improvement.

To the membership group—may you feel free at all times to offer suggestions, through your Councilors and Delegates, as to policies and procedures culminating in state-wide improvement in medical practice.

I assure you of my untiring effort throughout the year and for the officers let me also bespeak the assurance that they will, during this year as in the past, through the sacrifice of time and material loss be ready at all times through the medium of timely councils to shape the policies of our Society and further elevate the plane of medical practice in our state.

Sincerely,

Clyde D. Blake MD

President, The Kansas Medical Society.

EDITORIAL

PRESIDENT-ELECT

The Society welcomes Dr. Henry N. Tihen of Wichita, as its President-Elect for 1942-43. Dr. Tihen is particularly experienced and well informed concerning the work of the Society. He served as its first Vice-President during the year 1940-41; as Councilor of the Sixth District for two terms; as Chairman of the Executive Secretary Committee during the several years of its existence; as Chairman of the Society Committee on Control of Tuberculosis for the past four years; and has assisted and taken part in numerous other functions of the organization. This experience coupled with his general ability and his knowledge of Kansas medical affairs and problems equips him well to accept the important responsibilities of his year as President in 1942-43. The Society has in its election of Dr. Tihen made a worthy addition to its long line of capable and efficient Presidents.

ANNUAL MEETING

The 82nd Annual Session held in Topeka from May 12 to May 15 was one of the best meetings the Society has ever held.

The registration of 921, the attendance at the scientific sessions and other events, and the interest in the technical and scientific exhibits were particularly excellent.

The arrangements and facilities were well prepared, and the meeting as a whole moved with the smoothness and efficiency which results only through long and careful planning by committees.

The scientific program consisted of 39 papers presented by 29 speakers, and its excellence is indicated by the fact that all of the sessions including the first morning and the last afternoon were crowded at all times.

The plan of holding the election meeting of the House of Delegates at 4:00 p.m. on the last day seems to have solved a major problem which has existed at Kansas meetings for many years. At any rate, that session of the House of Delegates was well attended and interference of the House of Delegates meetings with the scientific program was completely eliminated.

The technical exhibits consisted of the following:

Westinghouse X-Ray Co., Inc., Long Island, N. Y.
William S. Merrell Company, Cincinnati, Ohio.
American Optical Company, Topeka
A. S. Aloe Company, St. Louis, Mo.
Merck & Company, Rahway, N. J.
M. & R. Dietetic Laboratories, Inc., Columbus, Ohio.
American Hospital Supply Corporation, Chicago, Ill.
Archer-Taylor Drug Company, Wichita.
John Wyeth & Brothers, Inc., Philadelphia, Pa.
Thacher Supply & Equipment Co., Inc., Topeka
Coca-Cola Company, Atlanta, Go.
Lederle Laboratories, Inc., New York, N. Y.
Gerry Optical Company, Kansas City, Mo.
Cole Chemical Company, St. Louis, Mo.
The Borden Company, New York, N. Y.
Medical Protective Company, Fort Wayne, Ind.
Mid-West Surgical Supply Co., Inc., Wichita.
J. B. Lippincott Company, Philadelphia, Pa.
H. G. Fisher & Co., Chicago, Ill.
W. E. Isle Company, Kansas City, Mo.
The C. V. Mosby Co., St. Louis, Mo.
Parke, Davis & Company, Detroit, Mich.
Petrolagar Laboratories, Chicago, Ill.
Quinton-Duffens Optical Company, Topeka
Abbott Laboratories, North Chicago, Ill.
A. J. Griner Company, Kansas City, Mo.
Eli Lilly & Company, Indianapolis, Ind.
Greb X-Ray Corporation, Kansas City, Mo.
Gerber Products Company, Fremont, Neb.
Zemmer Company, Pittsburg, Pa.
Geotze-Niemer, Topeka
Riggs Optical Company, Kansas City, Mo.
Holland-Rantos Company, Inc., New York, N. Y.
Mead Johnson & Company, Evansville, Ind.
General Electric X-Ray Corp., Chicago, Ill.
Lea & Febiger, Publishers, Philadelphia, Pa.
The Mennen Company, Newark, N. J.
McIntosh Electric Corporation, Chicago, Ill.
C. B. Fleet Company, Inc., St. Louis, Mo.
E. R. Squibb & Sons, New York, N. Y.
Smith, Kline & French Laboratories, Philadelphia, Pa.
DeVilbiss Company, Toledo, Ohio
Burroughs Wellcome & Co., Inc., New York, N. Y.
J. R. Siebrandt Mfg. Co., Kansas City, Mo.

The Society appreciates very much their generous interest and support of the meeting.

The ladies registration totaled 189 and the events for women were well attended. Likewise, good attendance was also had at the Secretaries Conference, the meeting of the Kansas Obstetrical and Gynecological Society, the Kansas Heart Association meeting, the events of the eye, ear, nose and throat section and other specialty events, and the meeting of the Kansas Medical Assistants Society which registered 187 at its second annual session.

New officials elected at the meeting were as follows:

President-Elect—Dr. Henry Tihen, Wichita
First Vice-President—Dr. J. L. Lattimore, Topeka
Second Vice-President—Dr. Marion Trueheart, Sterling
Secretary—Dr. John M. Porter, Concordia
Treasurer—Dr. Geo. M. Gray, Kansas City
Councilor for the Fourth District—Dr. Philip W. Morgan, Emporia
Councilor for the Fifth District—Dr. John L. Grove, Newton
Councilor for the Ninth District—Dr. J. H. A. Peck, St. Francis
Councilor for the Eleventh District—Dr. Herbert Atkins, Pratt
Delegate to the American Medical Association for 1941, Delegate-Elect for 1942 and 1943—Dr. F. L. Loveland, Topeka

Kansas takes pride in the fact that it has one of the best state meetings in the country and it is hoped that Dr. J. L. Lattimore, Dr. L. L. Saylor, Dr. W. H. Weidling, Dr. O. R. Clark, Dr. L. A. Smith, Dr. E. H. Decker, Dr. H. L. Kirkpatrick, Dr. L. E. Eckles, Dr. Guy Finney, Dr. H. L. Clark, Dr. L. R. Pyle, and the other members of the Shawnee County Medical Society committees may feel repaid by the universal compliments received concerning the meeting for the large amount of time and effort they gave in that connection.

AMERICAN MEDICAL ASSOCIATION MEETING

The annual session of the American Medical Association will be held at Cleveland, Ohio, from Monday, June 2, to Friday, June 6.

The detailed program, which has been published in recent issues of the Journal of the American Medical Association, will include information of value for every physician and will be of equal interest to specialists and general practitioners. Likewise, in the scientific exhibits and technical exhibits is extended an excellent opportunity to obtain postgraduate information.

The annual session of the American Medical Association is the greatest scientific meeting in the World. Every physician owes it to himself and to his patients to attend as many American Medical Association meetings as he finds possible. Since this year's session is easily accessible to Kansas physicians, it is hoped that the registration from this state will be particularly large.

MEDICAL ECONOMICS

PREPAYMENT PLANS*

Inasmuch as the hospital prepayment plan in Iowa has been supported by the Iowa State Medical Society it would seem that an occasional report of its progress would be in order. The plan is progressing very satisfactorily, and is rapidly expanding to offer its services to a larger portion of the state. On the first of October there were hospital members in thirty-six communities, and definite promotion has been carried on in eight of these towns. After the work was well established in Des Moines, offices were opened in Cedar Rapids and Dubuque, since these three communities furnished the major portion of the funds to start operation of the plan. Since then Burlington, Muscatine, Marshalltown, Clarinda and Waverly have been actively canvassed and the services accepted by a good group of contract holders in each town. By the time this issue of the Journal is printed operation will have been started in Mason City and the Tri-Cities of Davenport, Moline and Rock Island.

The Tri-Cities, being to a great extent a single community, were desirous of enrolling in one plan and after studying both Illinois and Iowa plans, and receiving information that the Iowa plan could operate in Illinois, they decided to contract with the Iowa plan. The inclusion of these cities, which are primarily industrial, will be of great value because the enrollment and operation is much simpler in the places where there are more of the larger industrial plants, and employers of large groups of people.

Operations in Clarinda and Waverly, towns of about 5,000 population, mark the first efforts to enter into the smaller communities of Iowa. In each of these the plan was opened to employed groups of five or more, and approximately ten per cent of the population in each town is enrolled. Efforts are being made to work out methods for enrolling others in these communities who are individually employed, but have some common interest or organization through which enrollment can be effected. It has been proved, beyond question, that the enrollment of individuals cannot be safely undertaken. Experiments in New York and other cities proved that such a scheme would soon bankrupt a plan. When individuals are enrolled there is an automatic enrollment of a large number who are excessively hospital-conscious, or who are below the average in health. Groups have been successfully enrolled through service clubs, newspapers, churches and similar organi-

*Reprinted from the Journal of Iowa State Medical Society.

zations, and such plans may be used if the demand is sufficient.

At the present time more than 12,000 persons are covered by the plan. Up to the first of October approximately $9,000 had been paid to the hospitals for services rendered the subscribers, and $1,100 was due hospitals on that date and would be paid following the approval by the executive committee. The statement of the company on September 1 showed that the income had become greater than the expenditure, and by October 1 a substantial reserve was being laid aside in case of an unusual demand during the winter months. With the rapid growth in the number of contracts issued there is no doubt that the plan will be successful. Experience has shown that even the present enrollment is sufficient to carry the overhead, pay all bills, and allow the accumulation of a reasonable reserve. However, it is the desire of everyone connected with the plan to have it reach as many people in the state as possible. A committee of the Iowa Farm Bureau Federation is studying the plans and expects to endorse the principle and assist in the development of methods to make it available to the farm population.

The Council on Hospital Service Plans of the American Hospital Association carries on a continuous study of the various plans, receives reports of their operation, and is able to correlate this information so as to help the various plans in their development. It has found many factors which make for success or failure and is able to warn the plans in advance of unsound moves, and point out methods which have proved valuable in similar circumstances elsewhere. In an analysis of 200,000 patients hospitalized under prepayment plans, it was found that from thirty to sixty per cent elected to use better accommodations than those provided by the plan. In other words, if the plan provided semi-private rooms, the patient was able to pay the small difference and have the advantage of a low priced private room. In addition, in one tabulation of 10,000 patients it was found that thirty-five per cent of these would have had to enter public wards if their hospital service had not paid their expenses in semi-private rooms. This means that 3,500 patients paid their hospitalization through this plan instead of having the expenses paid in the wards by the public through taxation. The patient benefited, the hospital benefited and the public benefited. These patients were also cared for by their own private physician instead of receiving free care through the provisions made in the wards.

Hospital prepayment seems to be meeting a real need of the public; it is well received in all communities where it has been presented, and is "sold" to the community with a maximum of effort and expense on the part of the plan itself.

PREPAYMENT FOR MEDICAL SERVICES

In contrast to the statements made in the preceding article on hospital service plans are the facts regarding the attempts in various states to furnish medical care to low income groups on a prepayment basis. For some time we have heard of the crying need of the public for some method of budgeting their medical expenses, and spreading the costs over a period of time. The newspapers have dealt with the subject, the various foundations and studies have shown a great desire on the part of the public for such plans, and the National Health Conference held that the need and demand were so great the federal government itself should take the matter in hand. With the great increase in interest in national defense, and with the necessity of bending all efforts to improve our condition along defense lines, the national figures have, at least temporarily, lost interest in the problem.

However, the medical profession has continued its research along this line in several states and counties and is gradually gathering a great deal of information as to the demand for this type of service. A study of these experiences is very interesting and leads one to the inescapable conclusion that the public is not only not demanding, but is not even interested in any such plans. Statewide plans have been put in operation in California and Michigan, and tentative plans for this fall are being developed in New Jersey, New York and Utah. Wisconsin used three areas during the last year in trying out three different types of plans, and after a year's operation expects to drop all of them as not having sufficient support to justify their continuation. (For a more complete discussion of this subject, see the August, 1940, issue of the Wisconsin Medical Journal.)

The Michigan Medical Service offers two contracts; one covers complete medical and surgical care, the other surgical care only. On May 31, 1940, there were 61,783 subscribers to the surgical benefit plan, but 58,000 of these were issued at one time to the employees of the Ford Motor Company. Only about 3,000 were issued to other groups, although a concentrated sales effort was made. There were only 1,200 complete medical service policies issued and these after four months of continuous efforts by sixteen representatives of the plan. During the first three months of operation about $50,000 were paid for services rendered to 1,200 patients. There were sufficient funds to pay the physicians in full, cover operating expenses and leave a small net balance. The issuing of the large group of policies for surgical benefits only to the Ford employees has been

of great benefit to the plan, and loads the statistics on the favorable side. The experience in other groups has been very unsatisfactory, and there are not enough now enrolled in the plan to make it self supporting.

The California Physicians Service offers complete coverage, hospital, medical and surgical, for $2.50 per month per person.. In addition there are deductible policies and those offering only physician's or hospital services. On July 1, 1940, after ten months of intensive work there were only 14,840 subscribers, in spite of the fact that such an apparent demand was worked up in the state there was serious consideration given to developing a state operated medical care plan. This plan is not self supporting as yet since it had a large initial loan for organization from the California State Medical Society and had to have an additional authorization of funds from that society after almost a year's operation. Almost eighty per cent of the members of the California State Medical Society have joined the plan, have placed literature before their patients, and have attempted to make the plan work. Possibly further effort and expense will finally get the plan on its feet, but the public has been slow in accepting the services offered.

New Jersey expects to inaugurate a statewide plan, but for the year 1940-41 the plan will be limited to two industrial counties. This plan is limited to groups, the cost is based on a percentage of the subscribers' earned income, and payment is limited to $250 for a single person or $500 for a family in any one contract year.

New York expects to start a plan in operation this fall. It will be organized in county units, no unit to include more than eighteen counties. The cost varies from $15 to $9.00 per year depending on the income and size of the family. Payment varies from $200 to $400 per year depending on the contract. In addition the policy holder must pay from $5.00 to $10.00 on any medical bill during a contract year before the plan begins payment on the balance. This is similar to the deductible automobile liability policy. Under this plan the physician is paid on a unit basis; his pay will depend entirely on the funds available and will vary from time to time.

The Utah plan is a cash indemnity insurance policy. For a fee of from $10.80 to $24.00 per year, depending on the size of the family, the policy holder is reimbursed in cash for certain stated conditions, with a limit of $100 for any one individual and $300 for any one family. This is not expected to cover all hospital and medical costs, but to cushion the load, and make it possible for the insured more easily to pay the balance.

The Advisory Committee on Voluntary Sickness Insurance of the State Medical Society of Wisconsin made a detailed study of the operation of the plans tried in three counties in that state. This committee feels that their experimentation has been worthwhile, and that further experiment with different plans should be carried out, in an effort to find plans which will prove effective. Several of their conclusions, based on a year's experience are well worth noting, and in most instances bear out the opinion expressed by the medical profession in the past. A few of the most interesting follow.

There was little spontaneous demand for the services by the people in the three communities where they were made available. Much publicity, many public and industrial meetings, and other methods of getting publicity failed to secure enough applicants to carry the plans to success. Subscribers to voluntary sickness insurance do not make use of preventive measures to any increased extent, even though there is no cost attached to these services. Immunizations were not increased, and prenatal examinations were not sought either earlier in pregnancy or more often than when paid for as individual services. Those who subscribed to the plans were not those for whom they were really intended. The subscribers were usually those in the "comfort bracket" who had been accustomed to paying their medical bills in full. The lower income group did not subscribe, and thus there was little real benefit. Free choice of physician was insisted on by the public participating, and is not a catch word used by the medical profession. Under sickness insurance a small percentage of the physicians render a high percentage of the services. The patients still call the physician of their choice, and there is no tendency for the work to be evenly distributed among the physicians. The busy physicians are still busy and the unoccupied are still unoccupied. It is not desirable to establish a large number of individually operated sickness insurance plans, because there is a great duplication in overhead, supervision, legal costs and similar expenses. Any plan should be extensive, and if possible statewide in its scope. Any plan of voluntary sickness insurance to be successful must have not only the approval, but also the active support of the physicians in the plan.

These observations bear out the opinion expressed previously in these columns that the public does not actually demand sickness insurance. There is an emotional appeal to the subject. The picture of the poor sick person, suffering for lack of medical care, due to inability to pay the high costs, is one which moves any one to pity. In actual practice, however, when that individual is given the opportunity to pay for these services in advance, at a fee within his ability he is seldom interested, and prefers to take the risk of being sick. The individual who can pay

nis bills will often see the desirability of budgeting these costs in this fashion and will subscribe to the plan, but he is not the man for whom it is intended. It may be that plans can be worked out which will appeal to the group for whom they will be most beneficial, but at this time no plan has been accepted with enthusiasm, and in fact it has been necessary to force plans on the few who could be persuaded to join. Further studies will be watched with interest.

MEDICAL SCHOOL

SOME SCIENTIFIC BASES FOR SULFONAMIDE THERAPY*

Tom R. Hamilton, M.D.

Bette Wasson, A.B.

Kansas City, Kansas

In a general way the mode of action of sulfonamide drugs is a production of an environment in body fluids and tissues which is unfavorable for bacterial multiplication. As the capacity of bacteria to multiply is depressed their invasiveness is diminished and their vitality reduced to a point at which the natural defenses of the body can dispose of the organisms (Lockwood)[1].

In order to rationalize the more perplexing problems remaining in the field of sulfonamide therapy, the fundamental bases behind them should be considered. These bases include several pertinent facts that are not evident, others that are obscure, and probably more that are not recognized. Those to be considered are (1) the underlying pathology of the lesion, (2) sulfonamide inhibitors which may be associated with the lesions, (3) the activities of antibacterial defense, and (4) the ratio between the number of bacteria and the concentration of the drug.

Tissues with relatively normal architecture and body fluid which are nearly normal favor an optimum chemotherapeutic response, although such areas are characterized by a rapid multiplicity and dissemination of bacteria (typified by diffuse streptococcic infections which had a poor prognosis before the advent of sulfonamide drugs) according to Lockwood. Infections of serous and synovial membranes, where the lining cells resist proteolytic ferments and have a good blood supply, are also good sites for favorable chemotherapy.

Resistance to chemotherapy is the rule in lesions characterized by local tissue necrosis. Autolyzed tissues and dead bacteria may serve as sulfonamide inhibitors, as shown by MacLeod[2]. Peptone was shown to have this effect (Lockwood[3]). Para amino benzoic acid is a growth promoting agent according to Wood[4], who postulated that sulfonamides act by inhibiting its utilization. This substance may be added to media to combat the effect of drug therapy on blood cultures (Janeway[5]).

On the basis of this activity of necrotic tissue, a surgeon should not forget his original teachings of debridement and drainage in his enthusiasm over new therapeutic agents. The difficulties lying in metastatic abscesses to which one does not have access still remain as a serious problem, e.g. in staphlococcic infections in spite of sulfathiazole specificity. Thrombophlebitis is another example in which the resistance to chemotherapeutic activity is marked according to Lockwood[1]. The problem of subacute bacterial endocarditis definitely is differentiated from the more simple one of bacteremia, by the complicating factors of thrombosis and the necrotic tissue of infarcts. It is also the opinion of the authors, from in vitro experiments now in progress, that concepts based upon observations on hemolytic streptococci are not carried over necessarily to the problem of Streptococcus viridans infections. Some substances fundamental in the production of such reactions as the sedimentation rate may complicate the problem. This is in keeping with the significant clinical observation pointed out by Major[6] that an early return of that reaction to normal is correlated with a favorable prognosis in these endocarditis patients treated with sulfonamide derivaties.

The antibacterial defense associated with sulfonamide drug action has been shown to be primarily in the activities of the leukocytes and antibodies in the blood, as strikingly demonstrated by Fuller et al[7].

The ratio between the number of bacteria and the concentration of the drug has been found to be of basic importance in the work of many investigators. Clinically, if an infection is overwhelming, an adequate amount of drug can not come in contact with organisms unless a direct application can be made into a wound. On the other hand, in such locations as these wounds and in the urine, sulfathiazole may be greatly concentrated, and an otherwise unaffected organism may be overcome (Hill et al[8], and Neter[9]). For this reason, "Optimum dilutions" are first determined for the inoculation of each strain of strep-

*Hixon Laboratory of Medical Research, University of Kansas School of Medicine.

NOTE: Strains of Streptococci used in experiments were furnished by Rebecca Lancefield, with the exception of KUH strains isolated by the authors in the Clinical Bacteriology Laboratory of University of Kansas Hospitals.

tococci which we study, for if the number of organisms is too great no drug effect may be ascertained. The marked variation between the original growth rates of selected strains of streptococci, with other conditions constant, gives an insight into the susceptibility of this environment to the specific organisms.

The classification of streptococci according to the Lancefield grouping by precipitin reactions using specific carbohydrate extracts of the organisms with known high titer antisera[10,11] leads to a clearer understanding, based upon accurate serological reaction. So-called "atypical" strains refer to those which have an inconsistent reaction on blood agar.

An evaluation of therapeutic response to a "hemolytic streptococcus infection" is dependent upon an almost species specificity of virulence among organisms which appear as so-called "typical hemolytic" strains on blood agar plates.

A selection of strains was made for an in vitro study of the effect of chemotherapeutic agents upon them, under as nearly bacteremic conditions as possible, i.e. with numbers of organisms comparable to those isolated from the blood stream of patients. Concentrations of drug in mg per cent comparable to clinical blood levels were also used.

Lancefield groups A, C, and G may be considered as "typical hemolytic".

Group A is the usual human pathogen, seen clinically in sore throats, scarlet fever, wounds, etc. e.g. Streptococcus pyogenes.

Group C is a usual animal pathogen, which in guinea pigs characteristically produces lymphadenitis. Clinically, it was interesting to note that an indolant nodular lesion of the finger, associated with epitrochlear and axillary lymphadenopathy measuring two cm in diameter, developed in an individual who had been autopsying guinea pigs with such an infection. In the patient, the lesions were stubborn and tender, but they were not attended by fever or leukocytosis and gave no untoward systemic reactions. A Group C streptococcus was isolated from the little pus which was obtained from the finger. All tests for tularemia were negative. The lymphadenopathy is still present after one year.

Group G is a mild human pathogen, e.g. Streptococcus angiosus. Members may be pathogenic for dogs.

Lancefield groups B and D may be called "atypical" since they may be hemolytic or green producing strains.

Group D, the enterococci, are typically sulfonamide resistant. A hemolytic strain, C3 Lancefield, and S. fecalis, a green producing KUH strain, were used. Another S. fecalis was isolated by the authors from a case of subacute bacterial endocarditis in which condition this organism may be confused with Streptococcus viridans as was pointed out by R. Lancefield (personal communication).

Group B, the bovine pathogen was studied using 090 "R" Lancefield, and a KUH strain CC from a skin lesion. These organisms may be either hemolytic or green producers, and in the latter instance may be confused with Streptococcus viridans along with Group D (as noted above).

The results of our studies show that sulfathiazole in blood concentrations within the therapeutic range inhibits the growth of Groups A, B, C, and G streptococci in vitro, while the enterococci were not affected in much higher concentrations.

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THE SURGICAL TREATMENT OF DEAFNESS*

La Verne B. Spake, M.D.

Kansas City, Kansas

The treatment of deafness by the labyrinthine fenestration operation has now passed the preliminary stages of experimentation, and is now a definite surgical procedure. Since the work of Holmgren[1], and Sourdille[2], and Lempert who first described his one stage technique, enough time has elapsed to review the report of such men as Campbell[4], Shambaugh[5], and Lempert[6]. That now we can be absolutely convinced that the future of the treatment of progressive deafness is surgical.

Sourdille[2] reports that a great number of his patients have retained opened fistula for periods of six to eight years following his fenestration operation.

*From the Department of Otology, Rhinology and Laryngology of the University of Kansas School of Medicine, Kansas City, Kansas.

Lempert's[6] report in his last series of 120 cases states that the fenestra, if it closes, usually starts within the first three weeks following the operation, and is complete in ten weeks. If not closed in eight weeks, it remains open permanently. Lempert's earliest cases now have had four years of positive improvement in hearing.

In a survey of all of the literature, there has been no audiometrically substantiated improvements in hearing in cases of otosclerosis from any other types of treatment, such as surgical or medical, as great as those reported by Lempert and those using his technique.

INDICATION FOR OPERATION

Otosclerosis is a bilateral type of chronic progressive deafness with a hereditary background, the onset occuring in the early teens, or aggravated by pregnancy or severe illness. The membranum tympanum is normal in appearance, and occasionally the red reflex is visible in the posterior quadrant. The chief complaint is tinnitus aurium which is of varing intensity, and may cause many sleepless nights until identified.

The fixation of stapes is indicated by a negative Gille.

The Schwabach is negative. Hearing is longer by bone than by air conduction. The use of 256 fork with vibration of 110 seconds by air, and seventy seconds by bone makes the ideal fork for proper comparison between air and bone. Loss of the low tones, sixty-four and 128, are the first ones lost. The Weber may or may not be laterlized.

The eustachian tube is patent.

A complete absence of suppurative middle ear disease.

A loss of hearing by air (audiometrically) of not more than sixty per cent.

A loss of hearing by bone conduction determined by masking (audiometrically) which does not exceed eighteen per cent to twenty per cent for the frequencies of 512—1024, and 2048.

The conversational frequencies must have declined below such a level that ordinary conversation is impossible.

Bone conduction is the index of cochlea function, so careful studies must be made and remade to be positive that the nerve function is ample to receive the sound waves as they are transmitted through endolymph of labyrinth to the cochlea.

The acuity of hearing should be also determined by the low conversational voice test.

A complete intact cutaneous lining of bony canal wall of the external auditory canal.

The labyrinthine horizontal semicircular canal must have normal responses to the caloric tests. The individual must be free from organic diseases, with normal blood, urine, and chemical studies.

A roentgenogram of mastoid cells to visualize the type of cells, and the zygomatic space available for operation procedure.

OPERATIVE PROCEDURE OF LEMPERT

1. One Stage:
   (a) Endaural incision.
   (b) Mastoidectomy with exposure of external semicircular canal.
   (c) Exposure of incus, and malleus.
   (d) Plastic construction of the tympanomeatal cutaneous membrane.
   (e) Separation of malleus from incus with amputation of the head of malleus.
   (f) Fenestration of horizontal external semicircular canal.
   (g) Plastic flap of the intact tympanomeatal cutaneous membrane, covers the fenestra and seals the perilymph, and lies in direct contact with perilymph.

CONCLUSION

1. No treatment for progressive deafness such as:
   (a) Dietary measures.
   (b) Metabolic correction.
   (c) Nasal and pharyngeal surgery.
   (d) Eustachian treatment.
   (e) Massage of membrane tympanum.
   (f) X-ray treatment.
   (g) All other types and measures of treatment.

NONE

None have given substantiated improvement in hearing as shown by audiometric findings.

II. The future of chronic progressive deafness is surgical.

(a) The operative procedure is not just another operation, but based on different surgical principles with a thorough knowledge and understanding of the principles of reconstructive plastic surgery.

(b) That practical physiologic hearing can be permantently restored in the great majority of cases in the properly selected cases.

(c) An operative procedure for restoration of a normal physiological function, without the presence of gross pathology, is another advance in the field of surgery.

In all fairness to the surgical technique of Lempert and his teachings. The otologist no matter what type of training he has had, should not attempt this particular operation without special training under a master in this surgical procedure or the operation

will fail, and the future progress of treating the chronic progressive otosclerosis will be handicapped.

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LYMPHOSARCOMA INVOLVING THE EPIDURAL SPACE

(Continued from Page 213)

SUMMARY

A case of lymphosarcoma of the epidural space has been reported. There is no clinical or roentgenographic evidence to suggest that this growth did not arise primarily in the epidural space. It followed the usual course of fairly rapid progression resulting fatally, while at the same time showing great susceptibility to x-ray therapy.

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OFFICIAL PROCEEDINGS

The following report presented by Dean H. R. Wahl on behalf of the University of Kansas School of Medicine is submitted by the Committee on Medical Schools as a part of its annual report:

The Lawrence division of the School of Medicine is still crowded, and has shown no change over the situation that has existed there during the past ten or twelve years. Accommodations are scarcely sufficient for a class of seventy, and as many as ninety students have been crowded into this space. The prospects of a new mineral resources building at Lawrence may provide additional facilities for the Medical School.

The Kansas City division has experienced one major change, moving the Dispensary into the new quarters. This new out-patient department is a great improvement over the old building. It is a fine, modern, three-story building containing ample rooms for the examination of patients, and a large classroom accommodating close to three hundred students. This building also has accommodations for laboratories, a new pharmacy, a maternity division, and all of the various clinics in the medical and surgical departments.

The convalescent ward continues to be an active place for the overflow of the hospital, especially for those patients not needing constant nursing care.

The actual cost of maintaining each patient is close to $2.70 per day, and it has seemed impossible to keep the ward open at the low rate of $1 per day received from the counties. However, this has probably been eliminated through a special appropriation given by the Legislature, the amount being equivalent to an additional $1 per day, and the tuberculosis ward accommodating thirty or forty patients will continue to be utilized for teaching and for the care of local tuberculosis patients.

The post-graduate clinics were recently held here, and many excellent courses were offered. One hundred and thirty-five men were enrolled. The courses covered a period of four days, and included subjects of special interest to practicing physicians.

The Medical School is still having difficulty taking care of the large number of applicants. The school has recently increased its requirements for admission, so that now a 1.3 average is required. Furthermore, the requirements for promotion from one year to the next have increased; instead of having a straight "C" averave, a student must now have a 1.2 average in order to be eligible for promotion.

The following is general medical school information:

Total number of students enrolled	337
Number of Freshman students (regular)	70
Number of Freshman students marked "special"	18
Number of students enrolled in Kansas City, Kan.	249
Number of Senior students (regular)	71
Number of Senior students (irregular)	11
Number of Junior students (regular)	70
Number of Junior students (irregular)	13
Number of Sophomore students (regular)	70
Number of Sophomore students (irregular)	14
Number of student applications received from Kan.	127
Number of students placed on the waiting list	25
Number of students from Kansas admitted early in summer	96
Number of these students who did not enter medical school	11
Number of Kansas applicants not eligible	18
Number of Kansas applicants fully qualified but not admitted	7
Total number of applicants	over 600
Total number of applicants from Missouri	11
Number of students admitted from Missouri	3
Number of Kansas residents admitted in reg. class	67
Number of Kansas residents as special students in Freshman class	18
Number of nurses in training	101
Number of nurses in graduating class	29
Number of student nurses with college degrees (combined degrees)	47
Number of student nurses with one or more years college work	56

The Army has called into service several members of the active resident staff, which has caused considerable disturbance in our organization, two of our full-time men having been called in the last two months. We are hoping that no further call will be made on the full-time personnel. These men are very difficult to replace at the present time.

Evacuation Hospital No. 77 has been recently organized here. Dr. E. H. Hashinger is in charge of the medical division and of the unit as a whole; Dr. James Weaver is in charge of the surgical division. The personnel recommended is as follows:

Surgery Division—Lt. Colonel: J. B. Weaver; Majors: F. I. Wilson, Wayne Bartlett, T. G. Dillon, D. F. Coburn; Captains: T. G. Duckett, Charles Isbell, M. S. Harless, William Kuhn II,

Thomas Johnson, Paul Rannie, F. A. Carmichael, Jr.; Lieutenants: Glenn Franklin, Melvin Rabe, Monti Belot, Harold Poole.

Medicine Division—Lt. Colonel: E. H. Hashinger; Major: M. H. Delp; Captains: Maurice Snyder; Joseph J. Lalich; Lieutenants: Max S. Allen, John Rumsey, Jesse Rising.

Denistry Division—Captain: Robert E. Menees.

Laboratory—Captain: Tom R. Hamilton.

X-Ray—Captain: John Bowser.

The following research gifts have been given to the Medical School:

Breon Fellowship of $2,000, now being held by Dr. Joseph Lalich.

Dorothy Hixon Clendening Fellowship of $5,000 includes two research fellows now employed here, Dr. Jerome Schnedorf and Miss Dorothy Lobb.

The Boyland Fund for Surgical Research contributed $500 for work on undulant fever; Mrs. Dorothy Crawford has been working on this problem under the supervision of Dr. Fred Angle.

Dr. James Weaver was recently given $2,820 by the Federal Government through the State Board of Health to study osteomyelitis. Dr. M. W. Tyler and Mr. Lewis Coriell are assisting Dr. Weaver in carrying on this research work.

In connection with research work carried on in this institution, it is particularly interesting to mention that the hospital has contributed approximately $5,000 for research, by providing free hospitalization.

The following gifts have been received by the Medical School:

$5 as a memorial to the late Dr. A. S. Welch.

A $300 bequest by Ina Ula Wright to be used for special equipment in the Occupational Therapy Department.

A $1,000 bequest by Mrs. Minnie Baskin to be used to provide lectures on the children's diseases.

$1,052 by the Wyandotte County Medical Society for the purchase of library books to be added to the medical school library. All members of the Wyandotte County Medical Society are entitled to the use of the library at any time, there being approximately 25,000 volumes available.

During the past year 1,300 county patients from all but ten counties in Kansas were admitted here, and that there were five counties from which more patients were sent than came from Wyandotte County, which would indicate that our institution is serving other counties in the state as well as the local county in which it is located.

TO: THE HOUSE OF DELEGATES

The Editorial Board wishes to submit the following report for the period from May 1, 1940, to May 1, 1941.

The financial statement for the Journal shows all income and expense to and including the April, 1941, issue and reflects the following condition:

FINANCIAL REPORT OF THE JOURNAL OF THE KANSAS MEDICAL SOCIETY
May 1, 1940, to May 1, 1941

ASSETS:		
Cash in Bank	$ 966.80	
Accounts Receivable		
April Adv. Rec.	$508.23	
Other Acc. Rec.	226.00	
	734.23	
Paper Stock on Hand	237.56	
Stamps and Mailing Fund Deposit	20.00	
	$1,958.59	$1,958.59
LIABILITIES:		
Accounts Payable — Printing and Engraving, April Issue	$ 376.41	$ 376.41
Surplus		$1,582.18

INCOME AND EXPENSE REPORT
May 1, 1940, to May 1, 1941

INCOME:		
Advertising	$5,761.86	
Subscriptions and Miscellaneous	67.72	
	$5,829.58	$5,829.58
EXPENSE:		
Printing	$3,407.07	
Engraving	287.01	
Mailing and Postage	265.00	
Salary	1,168.20	
Paper Stock ($577.64)	340.08	
Miscl. (Soc. Sec., Supplies, etc.)	128.88	
Travel	100.00	
	$5,696.24	$5,696.24
Net surplus for year		$ 133.34

The amount of $133.34 shown is in excess of income over expense for 1941 and may be compared with the amount of $301.15 shown as excess over income in 1940. Likewise, the surplus in the Journal fund of $1,582.18 may be compared with the surplus of $1,498.49 reported in 1940.

The Journal income for the two years was $5,829.58 in 1941 and $5,809.97 in 1940. The difference in excess over income as compared with some years over last year, therefore, represents certain additional expenses which have been made in the publication. This expense incurred in the increase of heavier cover and inside stock and certain other additional features which it is hoped have improved the Journal in appearance and readability.

The Journal pays for its own stationery, supplies, stamps and the salary of its full time employee; the publishing and mailing of the Journal and an attempt is made to see that the publication is maintained on a self-supporting basis.

The regular sections of the Journal which have been continued throughout the year include sections on Cancer Control; Eye, Ear, Nose and Throat; Medical Economics; Tuberculosis and Auxiliary and to these have been added the section on Books and the section on Medical School.

The Journal has continued its former policy of contributing exchange periodicals to the Library of the University of Kansas School of Medicine, sending some 140 publications received each month, and placing the books reviewed in the Stormont Medical Library of which more than fifty have been given to the library in the past year.

The Editorial Board believes that a larger number of articles can be prepared by members for publication in the Journal and similar medical publications. It desires that the Journal shall constantly improve the quality of the scientific material and cover as nearly as possible the interest and activities of all members. The Board wishes to express thanks to all who have made contributions to the Journal, to those members who have reviewed books for that section and to the committee chairmen who have

assisted in contributions and edited material for the various departments of the publication.

Any criticism or suggestion which the House of Delegates, the Council, officers or members of the Society may care to make will be gladly received by the Board.

Respectfully submitted,
W. M. Mills, M.D.,
Chairman, Editorial Board

TO: THE HOUSE OF DELEGATES

I wish to inform the Society that following of our members have died during the year on the dates and from the causes described. The report covers the period from April 1, 1940, to April 1, 1941, with the addition of those deaths not reported last year.

NAME	AGE YRS.	DATE	PLACE	CAUSE
Eagan, Robert E.....	70	Feb. 1	Long Beach, Cal	Cerebral Hemorrhage.
Mowery, William E...	55	Mar. 6	Orlando, Fla.	Heart Disease.
Johnson, Albert C.....	75	Apr. 2	Chanute	Unresolved pneumonia, old coronary thrombosis.
Walker, Joseph G.....	64	May 5	Wichita	Coronary occlusion.
Muir, David Thos.....	70	May 13	Alden	Carcinoma of bladder.
Brown, Charles E.....	62	June 17	Leavenworth	Acute empyema of gall bladder hypertensive heart disease.
Brown, John Clark....	81	June 25	Wichita	Abscess of liver, myocarditis.
Ross, Albert Stuber....	78	July 6	Sabetha	Cerebral hemorrhage.
Ressler, Charles E.....	70	July 16	Anthony	Arterial hypertension, general arteriosclerosis.
Wynne, Francis E.....	32	July 30	Baxter Springs	Poliomyelitis.
Snyder, Howard L.....	61	Aug. 16	Winfield	Coronary occlusion.
Nelson, Hugo E.....	69	Sept. 2	Denver, Colo.	Not known.
Gunter, Carl C.....	61	Sept. 24	Concordia	Arterial hypertension.
Beasley, John Newton	66	Oct. 20	Topeka	Suicide—inhaled gas from motor vehicle exhaust.
Spessard, Michael R...	66	Oct. 20	Beloit	Coronary occlusion.
King, Lamole R.....	75	Nov. 4	Junction City	Coronary occlusion.
Smith, Benj. Peter....	60	Nov. 5	Neodesha	Angina pectoris.
Jones, William H.....	63	Nov. 7	Ashland	Coronary thrombosis and chronic nephritis.
Hepler, Clarence R...	66	Nov. 17	Parsons	Coronary occlusion.
Rose, John H.....	63	Nov. 27	Kansas City	Lobar pneumonia, perforated appendix.
Beasley, Clinton.....	86	Dec. 3	Bonner Springs	Cerebral hemorrhage.
Shadwick, George W.	78	Dec. 5	Iola	Cerebral hemorrhage.
Williams, Alexander P.	66	Jan. 21	Neodesha	Carcinoma of liver.
Follett, Paris.....	75	Mar. 9	Chanute	Carcinoma of lung.
Scales, Herbert L.	71	Mar. 28	Hutchinson	Cerebral hemorrhage.

May I suggest a few minutes of silence at this time in honor of our departed members.

Respectfully submitted,
J. H. O'Connell, M.D.
Chairman, Committee on Necrology.

The remainder of the committee reports will be published in the June issue of the Journal.

NEWS NOTES

A. M. A. MEETING

The 92nd Annual Session of the American Medical Association will be held in Cleveland from June 2 to June 6, 1941. The Scientific sessions will be open on June 3 and the various section meetings will commence on June 4. The House of Delegates will hold its first meeting on June 2.

The American Golfing Association is to be held at the Cleveland County Club—Pepper Pyke Club, on June 2.

Hotel reservations may be made thru the Hotel Committee of the Cleveland Academy of Medicine of which Dr. Edward F. Krieger, 1604 Terminal Tower Building, Cleveland, is the chairman.

Since Cleveland is easily accessible by road and rail from Kansas (approximately 1000 miles from the center of the state) it is hoped that many members will find it possible to attend the meeting.

APPOINTMENTS

Governor Payne H. Ratner recently announced the following appointsents:

Dr. Ralph Ball of Manhattan as a member of the Kansas State Board of Medical Registration and Examination.

Dr. J. F. Gsell of Wichita, Dr. R. T. Nichols of Hiawatha, Dr. W. C. Lathrop of Norton, and Mr. William E. Scott of Kansas City as members of the Kansas State Board of Health.

ANNUAL REGISTRATION

The Secretary's office of the Kansas State Board of Medical Registration and Examination will send out renewal notices, about the middle of June, to the last known address of each licensee. Any doctor of medicine, who has changed his address during the past year and has not notified Dr. J. F. Hassig, Secretary, 905 North Seventh Street, Kansas City, Kansas, should do so at once.

Registration fees are due July 1, and must be paid by October 1. After that date there is a penalty of $5.00 for reinstatement of a Kansas license.

No receipts for payment of fees will be mailed until after July 1, as this is the beginning of the fiscal year for the State of Kansas.

The next annual meeting of the Board will be June 17-18, at the Wyandotte High School, Kansas City, Kansas, at which time the examination of applicants for licenses will be given.

QUESTIONNAIRE

The American Medical Association has prepared a new questionnaire on medical preparedness which is to be forwarded to every county medical society in the country in the near future.

The questionnaire, which is designed to obtain information concerning the availability of physicians for military service, will include the following questions:

KARO ADVANTAGES IN INFANT FEEDING

1. ***Minimum Fermentation*** —"The dextrin is not irritating to mucous membranes, easily digested without undue fermentation in the intestinal tract, converted into maltose and finally into dextrose before absorption. The amounts of maltose and dextrose, present or formed, and of cane sugar are rarely sufficient to produce irritation or fermentation."

Kugelmass: "Newer Nutrition in Pediatric Practice." J. B. Lippincott Co., Philadelphia, 1940, p. 334.

2. ***Maximum Assimilation*** — Metabolic studies of experimental animals may have valuable implications for infant nutrition. For example, "The relative assimilation values of mixed sugars per 100 gms. of body weight are as follows: Dextrin and maltose 1.32; dextrin and dextrose 1.32; sucrose 0.76; fructose 0.50; lactose 0.16 and galactose 0.10."

Ariyama & Takahasi, Biochemische, Zeitschrift, vol. 216, p. 269, 1929.

3. ***Ready Utilization*** —"Karo syrup may be fed in large amounts without danger and is, at the same time, readily utilized. In our experience, it has been the most satisfactory form of carbohydrate for the feeding of normal and most sick infants."

Marriott: "Infant Nutrition." C. V. Mosby Co., St. Louis, 1930, p. 45.

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THE CHEMICAL COMPOSITION OF KARO IN GLASS AND IN TINS IS IDENTICAL

Dextrins	37%
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Moisture	25%

1 oz. volume	40 grams 120 cals.
1 oz. wt.	28 grams 90 cals.
1 teaspoon	20 cals.
1 tablespoon	60 cals.

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CORN PRODUCTS SALES COMPANY • 17 BATTERY PLACE, NEW YORK CITY

Actual number of physicians now engaged on a full-time basis in Hospitals, Related Institutions, Health Departments and Medical Schools.

Actual number of physicians now engaged on a full-time basis in industry.

Actual number of physicians now engaged in Private Practice.

Actual number of physicians who are retired or not in practice.

Number of physicians who are deemed essential for the medical staffs of hospitals, related Institutions, Health Departments and Medical Schools (if any).

Number of physicians who are needed for full-time industrial practice, and for the care of the civilian population.

TUBERCULOSIS COURSE

The Kansas State Board of Health, the Kansas Tuberculosis and Health Association and the Society Committee on Control of Tuberculosis recently sponsored a state wide post graduate course on that subject.

Meetings were held in Topeka on April 14, in Parsons on April 15, in Wichita on April 16, and in Salina on April 17.

The speakers were Dr. H. I. Spector of St. Louis, Missouri, a member of the staff of the Chest Clinic of St. Louis University School of Medicine, and Dr. John F. Allen of Omaha, Nebraska, Professor of Clinical Medicine of the University of Nebraska School of Medicine.

Lay meetings were held in the afternoons and scientific meetings in the evenings in each of the above towns.

SELECTIVE SERVICE EXAMINATION

The Kansas Selective Service System recently completed a study of physical examination rejections of selective service registrants by county boards and by induction boards. The study includes information received from 13,636 physical examinations made to date by county boards and 5,180 physical examinations made to date by induction boards.

The percentages of registrants accepted and rejected for physical examination reasons are shown in the study as follows:

Sixty-five per cent of the registrants examined by county boards was found to be physically fit.

Seventeen per cent of the registrants examined by county boards was found to be physically fit for limited military duty.

Eighteen per cent of the registrants examined by county boards was found to be physically unfit for military service.

Eighty-eight per cent of the registrants pronounced physically fit by the county boards was accepted by the induction boards.

The variation of twelve per cent between the findings of the county boards and those of the induction boards was occasioned in many instances by the different type of examinations and the equipment and facilities provided therefor at the induction board centers.

The relative percentages of disability found by the county boards and the induction boards in the number rejected was as follows:

For the local Treatment of Acute Anterior Urethritis
(DUE TO NEISSERIA GONORRHEAE)

SILVER PICRATE* Wyeth

A complete technique of treatment and literature will be sent upon request

*Silver Picrate is a definite crystalline compound of silver and picric acid. It is available in the form of crystals and soluble trituration for the preparation of solutions, suppositories, water-soluble jelly, and powder for vaginal insufflation.

Silver Picrate, Wyeth, has a convincing record of effectiveness as a local treatment for acute anterior urethritis caused by Neisseria gonorrheae.[1] An aqueous solution (0.5 percent) of silver picrate or water-soluble jelly (0.5 percent) are employed in the treatment.

1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph., Gon. & Ven. Dis., **23,** 201 (March), 1939.

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***Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154**
Laryngoscope, Jan. 1937, Vol. XLVII, No. 1, 58-60

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Disease and deficiencies of teeth; malocclusion, etc	15 %	21.5%
Loss of function, deformities, amputations of extremities	13 %	8.5%
Diseases of eyes, defective vision	12.5%	12 %
Diseases, enlargement and functional deficiencies of heart	12 %	10 %
Diseases, structural defects, abdominal organs; hernia, etc	9.5%	9 %
Mental and nervous diseases	8.5%	3 %
Venereal diseases	6 %	8.5%
Overweight	4 %	3 %
Diseases of ears, defective hearing	3.5%	5 %
Underweight	3 %	2 %
Diseases of lungs	2.5%	10 %
All other	10 %	11.5%

The Kansas Selective Service System has said that it is well pleased with the efficiency the above study indicates is occurring in the Kansas selective service physical examination program. The small variation between induction board and county board findings speaks well for the type of examinations being given by the county board examiners and particularly so when the difference in equipment and facilities made available at those points is considered. It is also said that the Kansas percentage of rejections both by county boards and induction boards is the lowest or among the lowest in the United States.

LEGISLATURE

Approximately sixty bills of medical and public health interest were introduced in the 1941 session of the legislature which terminated on April 4.

Of foremost interest in this regard were the following:

House Bill 1, House Bill 286, House Resolution 8, and House Resolution 45, pertaining to the practice of medicine and surgery by osteopaths, none of which became effective.

House Bill 8 and Senate Bill 223, pertaining to the examination and licensure of naturopaths, both of which were killed.

House Bill 25 and Senate Resolution 2; extending to the Kansas State Board of Health additional authority and facilities for the handling of birth certificates, both of which were passed and signed by the Governor.

House Bill 31; requiring that chiropractors shall attend the meetings of the Kansas State Chiropractors Association or similar meetings before they shall be eligible to have their licenses re-registered, which was passed by the House and killed by a Senate Committee.

House Bill 41, House Bill 7, House Bill 367, House Bill 407 and Senate Bill 77; authorizing the construction of municipal hospitals in Russell, Arkansas City, Seneca, Herrington, and Pratt, all of which were passed and signed by the Governor.

House Bill 201; regulating the sale and use of narcotic drugs, which was not passed.

House Bill 245 and Senate Bill 312; pertaining to workmans compensation and including revision of certain medical functions therein, neither of which was passed.

House Bill 265 and House Bill 368; providing for pre maritial and prenatal physical examinations respectively; neither of which was passed.

House Bill 319; an enabling act for group hospital

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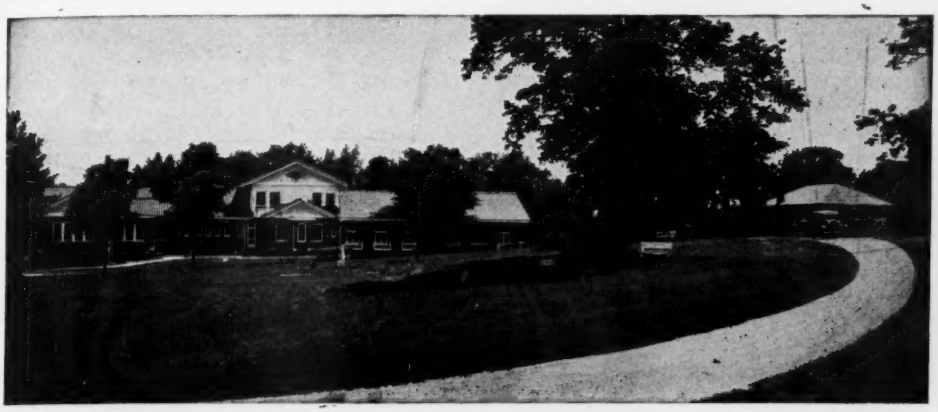

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insurance sponsored by the Kansas State Hospital Association, which was passed and signed by the Governor.

Senate Resolution 21; requesting that the Legislative Research Council study the need for additional tuberculosis sanitoriam, which was adopted.

Senate Bill 84; authorizing the amount available in claims against insolvent estates for expenses of the last sickness to be shared with claims for expenses of administration of estates, which was not passed.

A detailed explanation of the bills introduced in the session pertaining to medical and public health subjects was forwarded to the presidents, and secretaries of the county medical societies and the official representatives under the date of May 2.

MEMBERS

Dr. Harold H. Jones of Winfield was appointed Kansas representative of the Board of Governors of the American College of Physicians at the annual meeting of that organization held in Boston, Massachusetts during April.

Dr. J. L. Lattimore of Topeka, who is President-Elect of the American Society of Clinical Pathologists, was the guest speaker at a meeting of the Oklahoma State Society of Medical Technologists held on May 21 at Oklahoma City in conjunction with the annual meeting of the Oklahoma State Medical Association.

Dr. Karl A. Menninger, Dr. Will C. Menninger and Dr. Robert P. Knight of the Menninger Clinic in Topeka, have recently been elected to several positions of importance in national and district phychiatric organizations.

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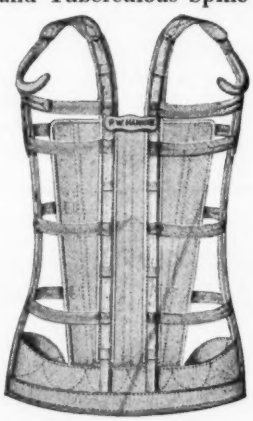

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Dr. Will C. Menninger was elected as Secretary of the Central Neuropsychiatric Association in October and in May as Secretary of the American Psychiatric Association. Dr. Robert Knight was re-elected President of the Topeka Psychoanalytic Society, a regional organization of the American Psychoanalytic Society. Dr. Karl A. Menninger was elected as councilor of the American Psychiatric Association, which is affiliated with the American Psychiatric Association and as President of the American Psychoanalytic Society.

COUNTY SOCIETIES

The Golden Belt Medical Society met in Junction City on April 3. Speakers were: Dr. L. S. Nelson of Salina who spoke on "Commoner Injuries of the Hand"; Dr. R. Lee Hoffman of Kansas City, Missouri, who discussed "Diseases of the Female Urethra"; Dr. Fred J. McEwen of Wichita, who spoke on "Cardiac Emergencies" and Dr. Earl Mills of Wichita, who discussed "Functional Heart Diseases." Dr. Robert M. Carr of Junction City was elected President of the organization for the coming year, and Dr. E. R. Gelvin of Concordia was elected Secretary.

The Lyon County Medical Society held a meeting in Emporia on March 4. Dr. F. A. Eckdall of Emporia spoke on "Medical Treatment of Gastric Ulcer." At the February meeting of the society, Dr. J. F. Gsell of Wichita spoke on "Medicine and Politics."

Ninety members of the Southeastern Kansas Medical Society attended a meeting of that society held at the CCC camp in Neodesha on March 28. Dr. J. H. Humphrey, a

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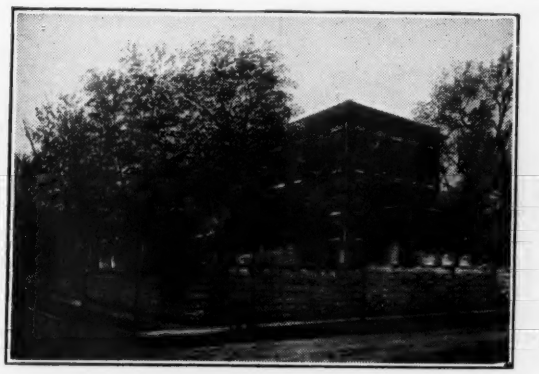

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former member of the society who has recently returned from China, spoke on "Medical Practice in the War Zones of China." A representative of Eli Lilly and Company, gave an illustrated lecture on "Late Methods in Treatment of Diabetes."

A meeting of the Northwest Kansas Medical Society was held at the State Sanatorium at Norton, Kansas, on April 17. The Scientific program consisted of papers by the Sanatorium staff. Dr. C. E. Petterson spoke on "Shock." Dr. F. Stone, Jr., discussed "Abdominal Pain Associated with Uretheral Pathology." Dr. C. F. Taylor gave a paper on "Intra-pleural Penumolysis."

The Saline County Medical Society and the Saline County Dental Society held a joint meeting on March 20

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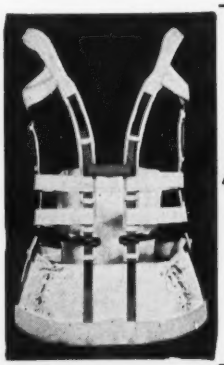

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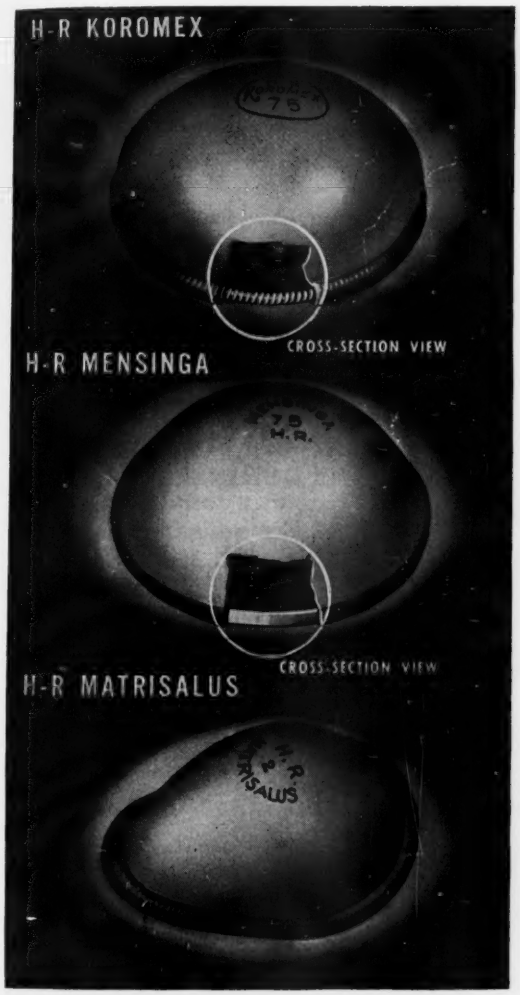

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in Salina. Dr. J. S. Hughes of the Department of Chemistry of the Kansas State College of Manhattan spoke on "Nutrition in Relation to Physical and Mental Efficiency."

KANSAS MEDICAL ASSISTANTS

One hundred eighty-seven assistants attended the second annual meeting of the Kansas Medical Assistants Society in Topeka on May 11 and 12. Six out-of-state assistants were guests. New officers of the Society are Miss Myrtle Thompson, Manhattan, Vice-President; Mrs. Florence Linton, Topeka, President-Elect; Mrs. Vera Matthews, Kansas City, President; Miss Mildred McClure, Kansas City, Secretary; and Miss Marcelline Dinwiddie, Hutchinson, Treasurer. Miss Bessie Parker, Emporia; Miss Marie Schwartz, Great Bend; Mrs. Marjorie Euler, Topeka; Miss Dollie Herington, Arkansas City; and Miss Margaret O'Rorke, Dodge City were elected Councilors.

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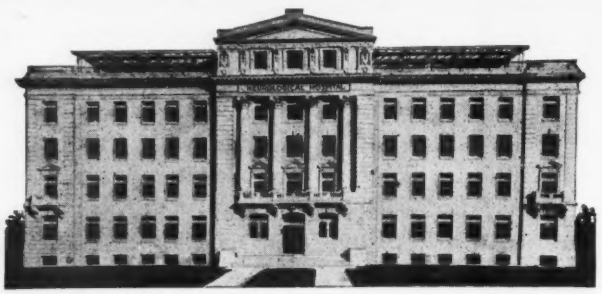

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